

## G01Q

### SCANNING-PROBE TECHNIQUES OR APPARATUS; APPLICATIONS OF SCANNING-PROBE TECHNIQUES, e.g. SCANNING-PROBE MICROSCOPY [SPM]

#### Definition statement

*This subclass/group covers:*

Scanning probes, i.e. devices having at least a tip of nanometre sized dimensions that scans or moves over an object surface, typically at a distance of a few angstroms or nanometres, monitoring some interaction between the tip and the surface, e.g. monitoring the generation of a tunnelling current.

Techniques or apparatus involving the use of scanning probes.

The following subjects are therefore covered, the list being non-exhaustive:

- scanning probes per se, their manufacture or their related instrumentation, e.g. holders.
- scanning-probe microscopy (SPM) or microscopes, i.e. the application of scanning probes to the investigation or analysis of a surface structure in atomic ranges.
- applications, other than SPM, involving the use of scanning probes.

#### References relevant to classification in this main group

*This subclass/group does not cover:*

Electron or ion microscopes (e.g. scanning electron microscopes, transmission electron microscopes) and details thereof	<a href="#">H01J 37/00</a>
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#### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Optical microscopes in general	<a href="#">G02B 21/00</a>
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#### Special rules of classification within this subclass

In this subclass, the first place priority rule is applied, i.e. at each hierarchical level, classification is made in the first appropriate place.

## G01Q 10/00

**Scanning or positioning arrangements, i.e. arrangements for actively controlling the movement or position of the probe**

### Definition statement

*This subclass/group covers:*

Actively controlling the movement or the location of the scanning probe tip relative to the object surface.

## G01Q 10/02

**Coarse scanning or positioning**

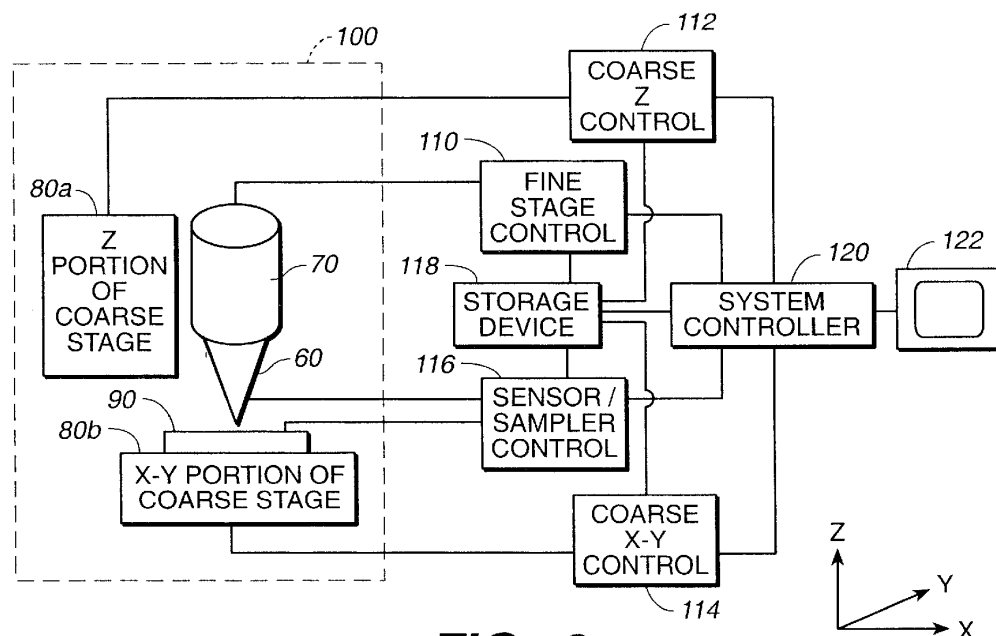
### Definition statement

*This subclass/group covers:*

Generating movement of the scanning probe tip relative to the object surface at a scale larger than the resolution of the scanning probe microscope.

Coarse scanning or positioning means are at least partially mechanical.

Illustrative example: US6267005



**FIG. 2**

## G01Q 10/04

### Fine scanning or positioning

#### Definition statement

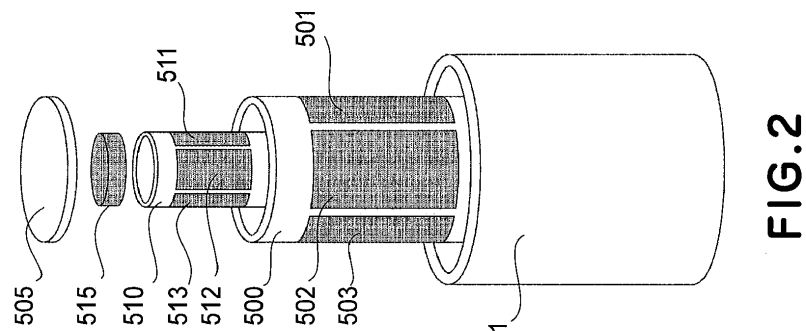
*This subclass/group covers:*

Generating movement of the scanning probe tip relative to the object surface of a size comparable to the resolution of the scanning probe microscope.

Fine scanning. Piezoelectrical scanning or positioning means are classified in this group.

Illustrative example:

Patent Application Publication Jul. 12, 2007 Sheet 1 of 6 US 2007/0158559 A1



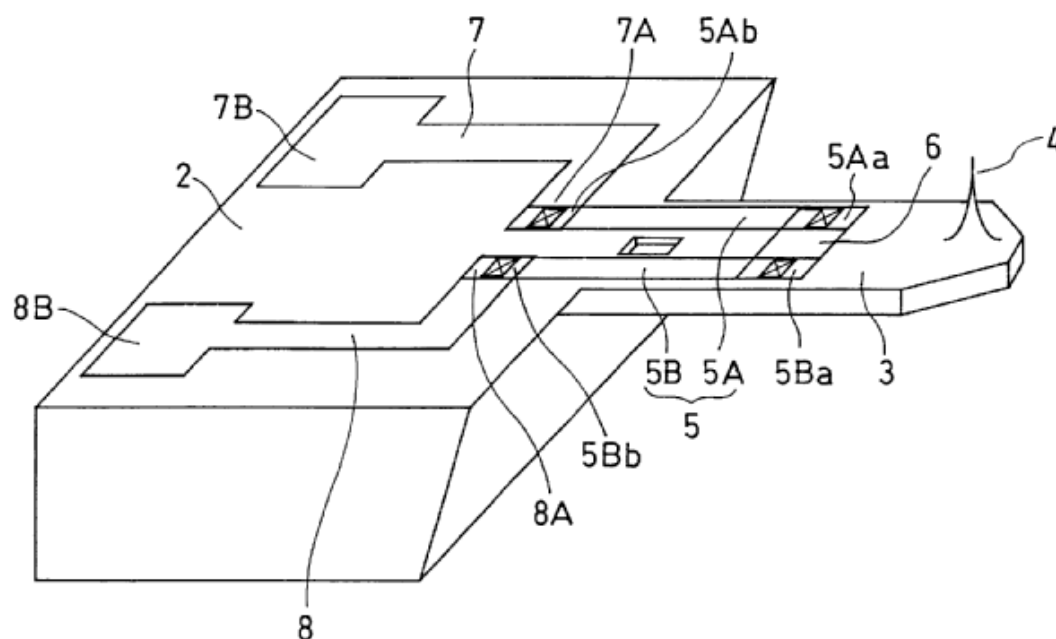
## G01Q 10/045

**[N: Self-actuating probes, i.e. wherein the actuating means for driving are part of the probe itself, e.g. piezoelectric means on a cantilever probe]**

#### Definition statement

*This subclass/group covers:*

Illustrative example of subject matter classified in this group: US6422069.



## G01Q 10/06

### Circuits or algorithms therefor

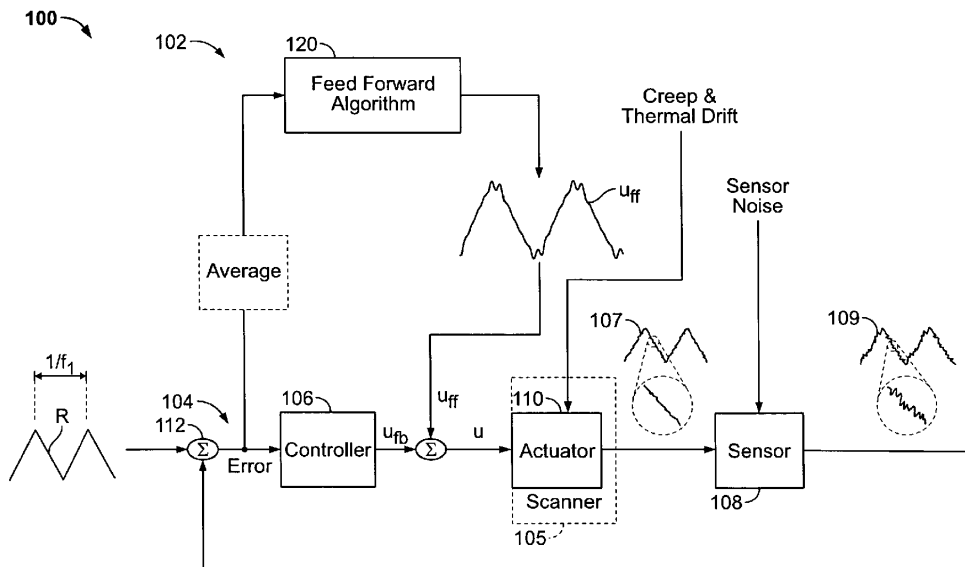
#### Definition statement

*This subclass/group covers:*

Electronic means for locating or stabilizing the movement of the scanning probe tip relative to the object surface.

Electronic circuits or algorithms governing scanning.

Illustrative example: US2008/0277582, Figure 6.



## G01Q 10/065

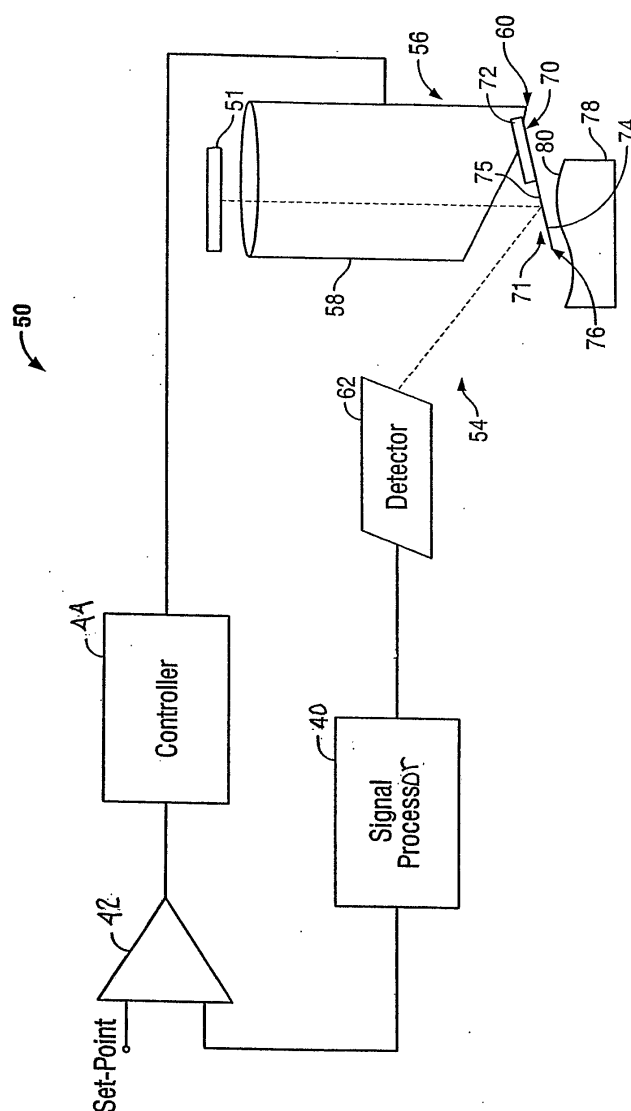
[N: Feedback mechanisms, i.e. wherein the signal for driving the probe is modified by a signal coming from the probe itself]

### Definition statement

*This subclass/group covers:*

Circuits or algorithms for driving the scanning probe during a scanning probe microscopy measurement, wherein the driving signal is adjusted during the measurement by using the detected signal coming from the interaction between the probe and the sample.

Illustrative example:



**FIG. 6**

### Special rules of classification within this group

In the case said circuits or algorithms belong to a specific kind of scanning probe microscope, the documents about them should be classified in the class pertinent to said particular kind of scanning probe microscope: e.g. a tapping mode atomic force microscopy, wherein the detected signal is used to keep

the oscillation frequency of an atomic force microscopy probe, i.e., a cantilever, at its resonance frequency, should be classified in [G01Q 60/34](#).

## **G01Q 20/00**

### **Monitoring the movement or position of the probe**

#### **Definition statement**

*This subclass/group covers:*

Methods or apparatus to monitor the movement of the probe.

#### **Informative references**

*Attention is drawn to the following places, which may be of interest for search:*

Monitoring the movement or position of the probe with active control thereof	<a href="#">G01Q 10/00</a>
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## **G01Q 20/02**

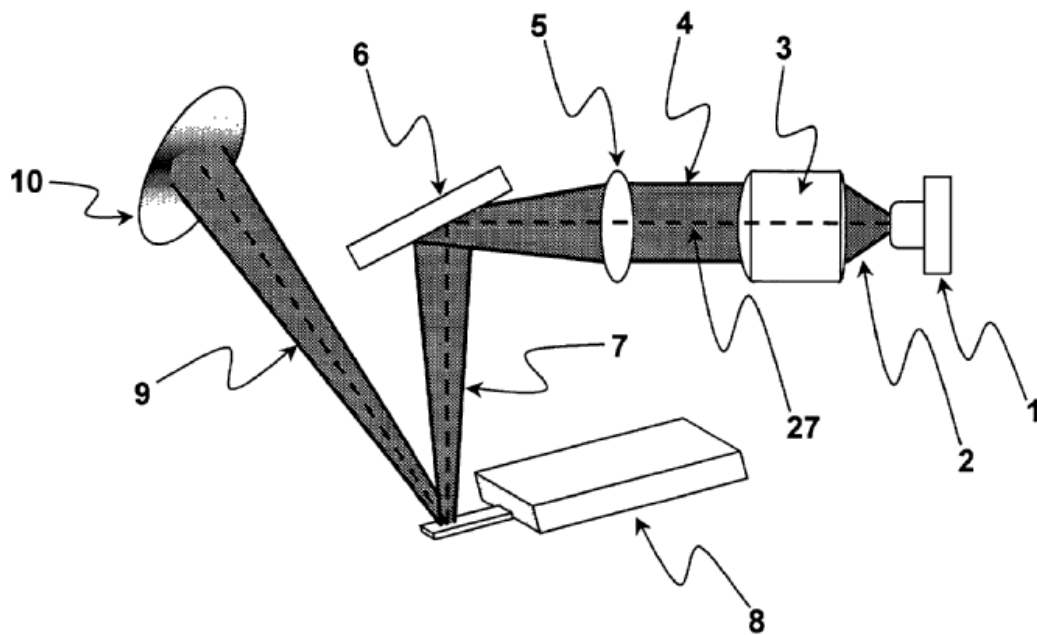
### **by optical means**

#### **Definition statement**

*This subclass/group covers:*

Monitoring the movement of the probe by means of light-sensitive/responsive devices.

Illustrative example: US2003047675.



## G01Q 20/04

**Self-detecting probes, i.e. wherein the probe itself generates a signal representative of its position, e.g. piezo-electric gauge**

### Definition statement

*This subclass/group covers:*

Probes comprising in their structure means for detecting a signal to control/monitor their movements, e.g. piezoelectric gauges.

This group covers any kind of position-sensitive sensor integrated in the probe, like piezoresistive, capacitive, etc.

Illustrative example:



FIG. 1A

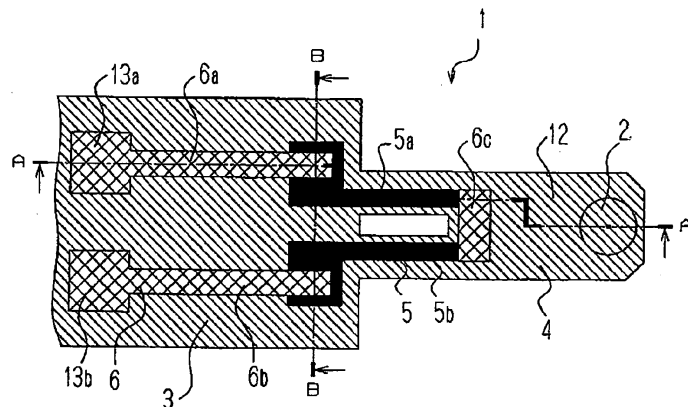
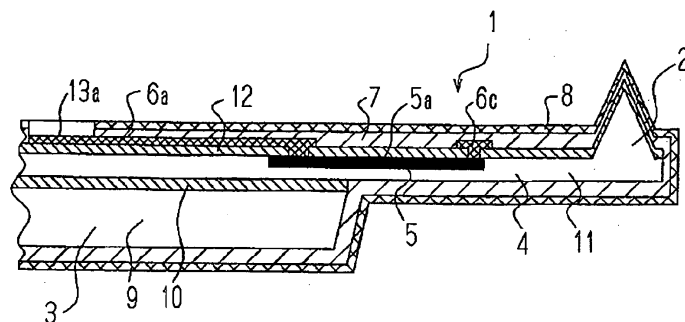


FIG. 1B



**G01Q 30/00**

**Auxiliary means serving to assist or improve the scanning probe techniques or apparatus, e.g. display or data processing devices**

### Definition statement

*This subclass/group covers:*

Devices or methods to assist or improve the analysis or investigation.

## **G01Q 30/02**

**Non-SPM analysing devices, e.g. SEM [Scanning Electron Microscope], spectrometer or optical microscope**

### **Definition statement**

*This subclass/group covers:*

An analysing or investigating device, different from a scanning probe microscope, for assisting or improving the master scanning probe techniques or apparatus.

Illustrative example:

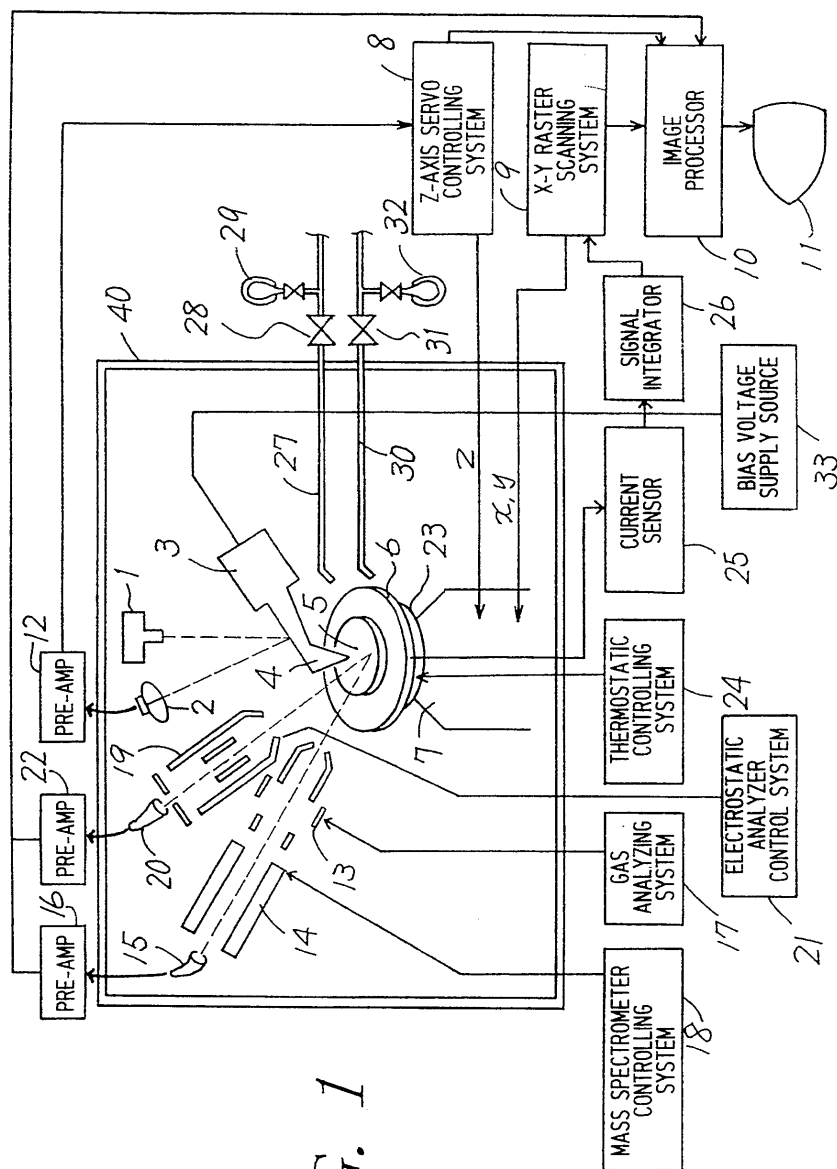


FIG. 1

G01Q 30/025

[N: Optical microscopes coupled with SPM]



models and mathematical methods and algorithms for data analysis.

Illustrative example:

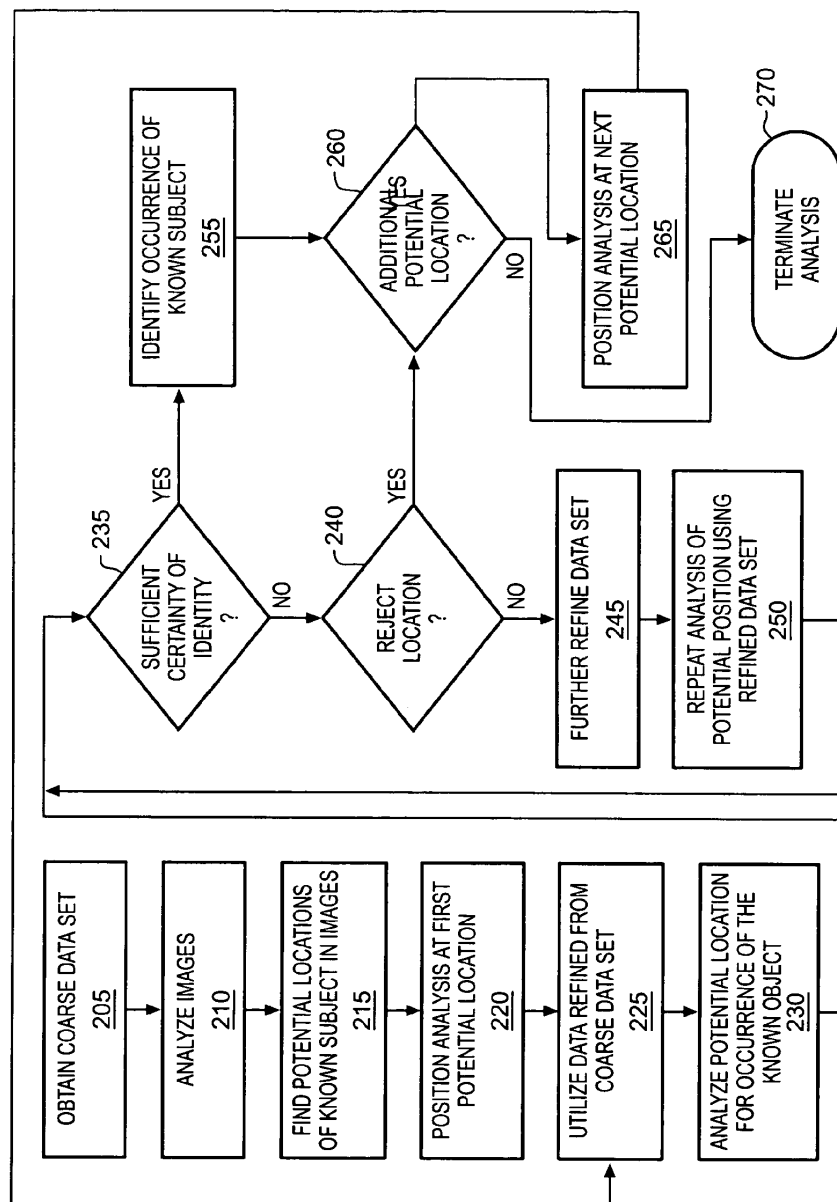


FIG. 2

PARAMETER-BASED ANALYSIS

**G01Q 30/06**

**for error compensation**

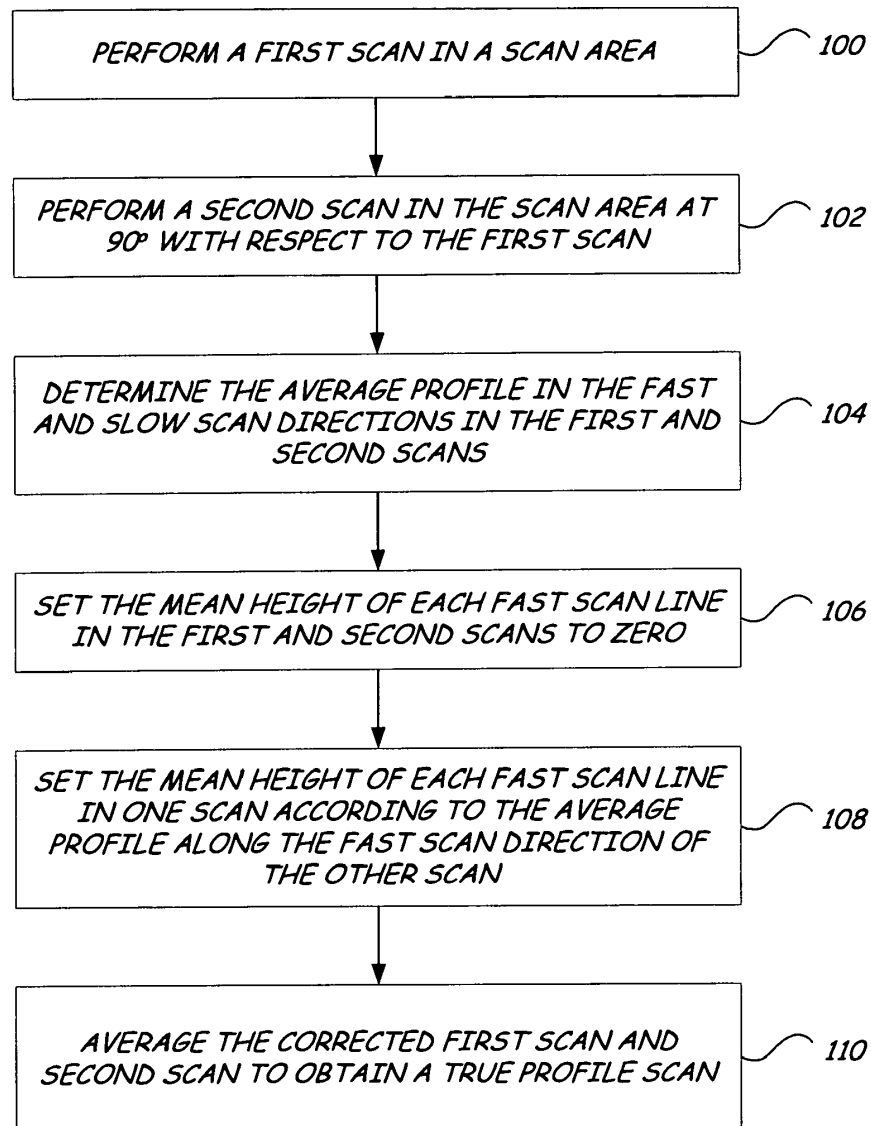
**Definition statement**

*This subclass/group covers:*

A programmable device wherein the data information is used to correct or fix

the performance of the SPM.

Illustrative example:



**FIG. 6**

### Informative references

Attention is drawn to the following places, which may be of interest for search:

Feedback methods	<a href="#">G01Q 10/065</a>
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Regulations/error compensation means integrated in the probe	<a href="#">G01Q 70/04</a>
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## **G01Q 30/08**

**Means for establishing or regulating a desired environmental condition within a sample chamber**

### **Definition statement**

*This subclass/group covers:*

Means to adjust or control parameters, e.g. temperature, pressure or humidity, of a working environment condition inside the chamber containing the sample being studied.

## **G01Q 30/10**

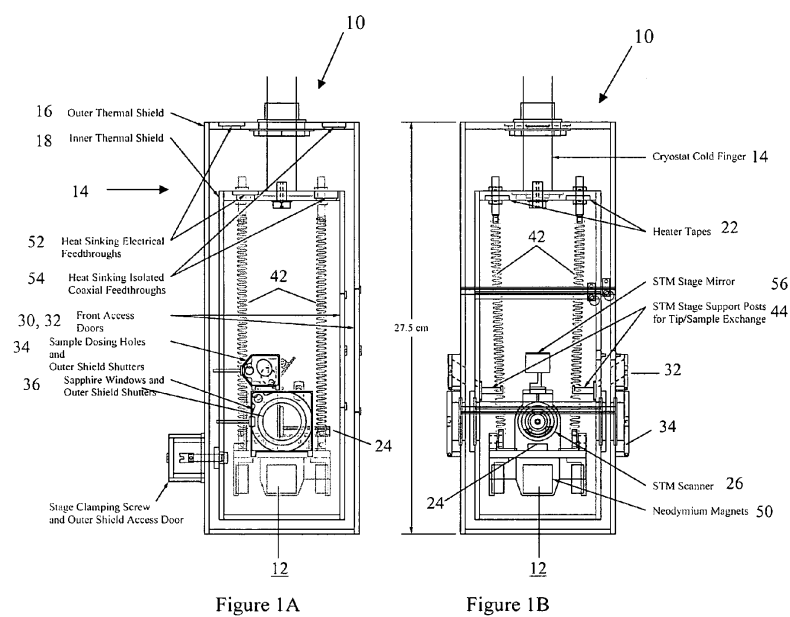
**Thermal environment**

### **Definition statement**

*This subclass/group covers:*

Means to adjust or control the temperature of the sample chamber, e.g. a cryostat or heater that allows SPM to be performed at low or high temperatures.

Illustrative example:



## G01Q 30/12

### Fluid environment

#### Definition statement

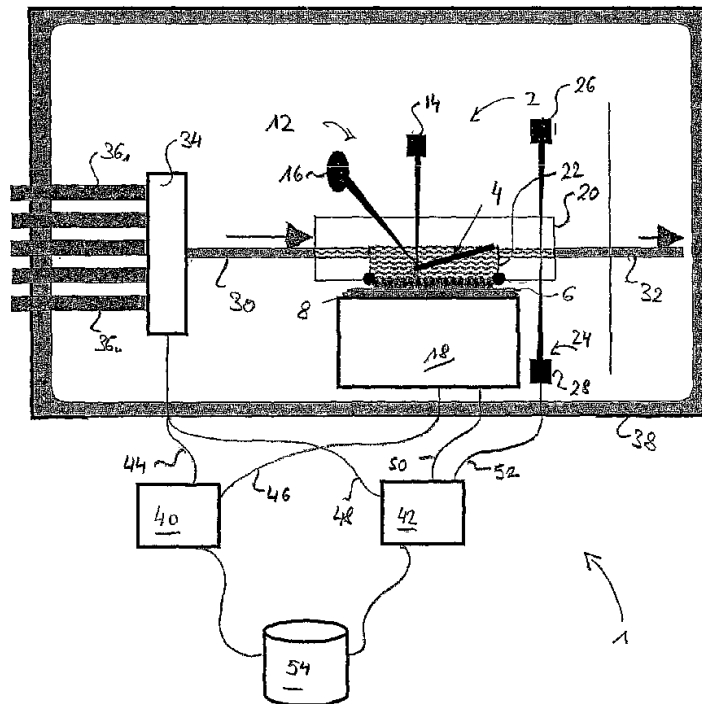
*This subclass/group covers:*

Means to adjust or control parameters, e.g. pressure or compositions, of the fluid environment inside the sample chamber. The fluid environment can be in



liquid or gas state.

Illustrative example: WO2006/040025, Figure 2



## G01Q 30/14

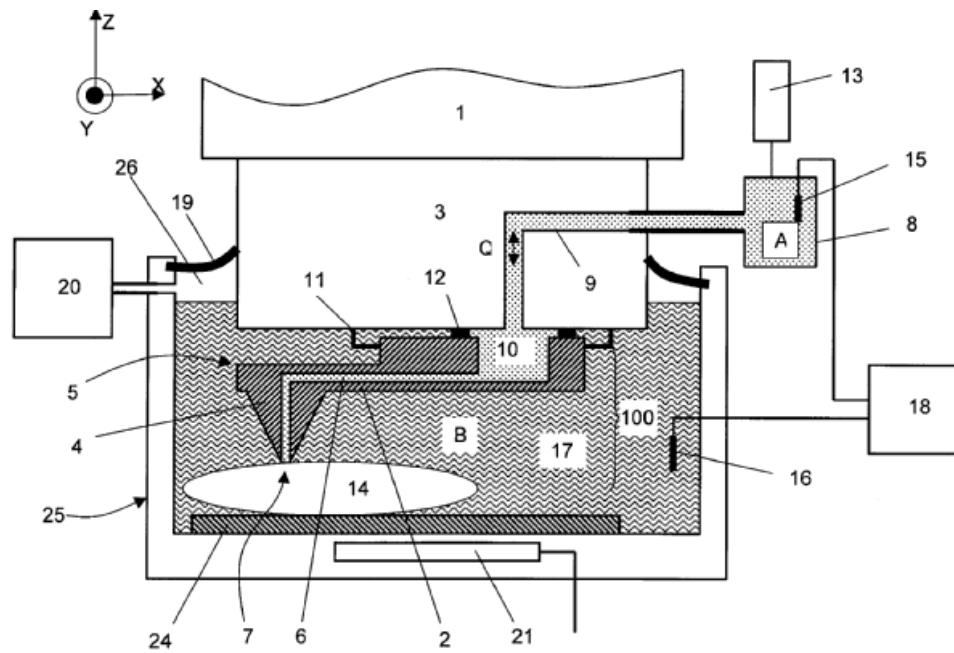
### Liquid environment

#### Definition statement

*This subclass/group covers:*

Means to adjust or control parameters of the liquid environment, e.g. water or other liquid chemical, inside the sample chamber.

Illustrative example: EP1990626



## G01Q 30/16

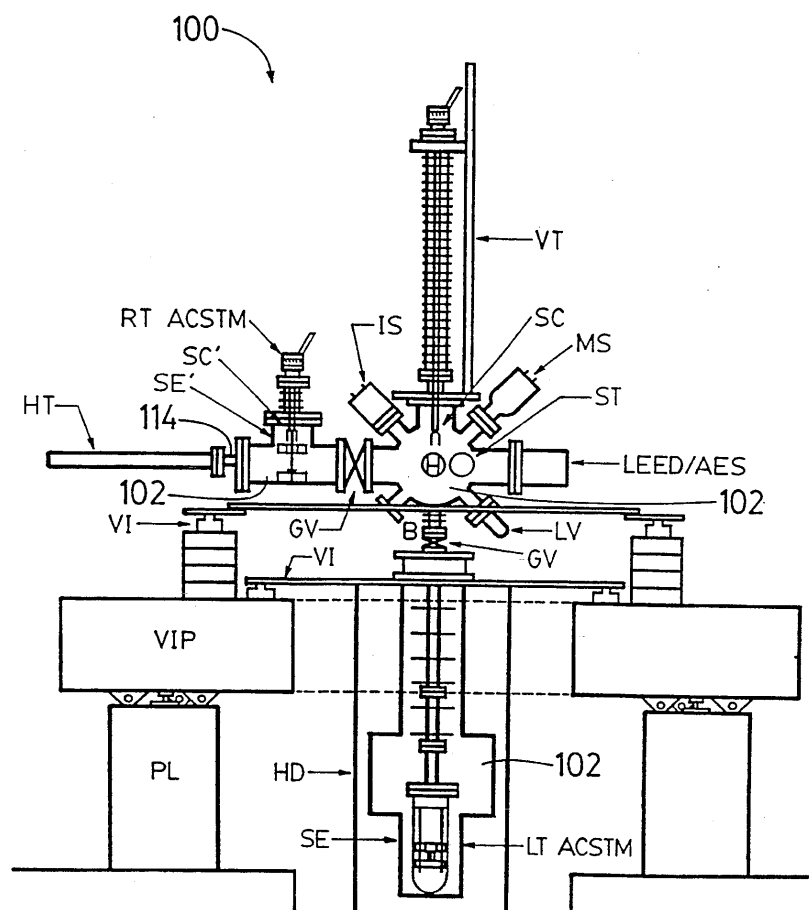
### Vacuum environment

#### Definition statement

*This subclass/group covers:*

Means to adjust or control a vacuum condition inside the sample chamber, e.g. pumping means.

Illustrative example:



**G01Q 30/18**

**Means for protecting or isolating the interior of a sample chamber from external environmental conditions or**

**influences, e.g. vibrations or electromagnetic fields**

**Definition statement**

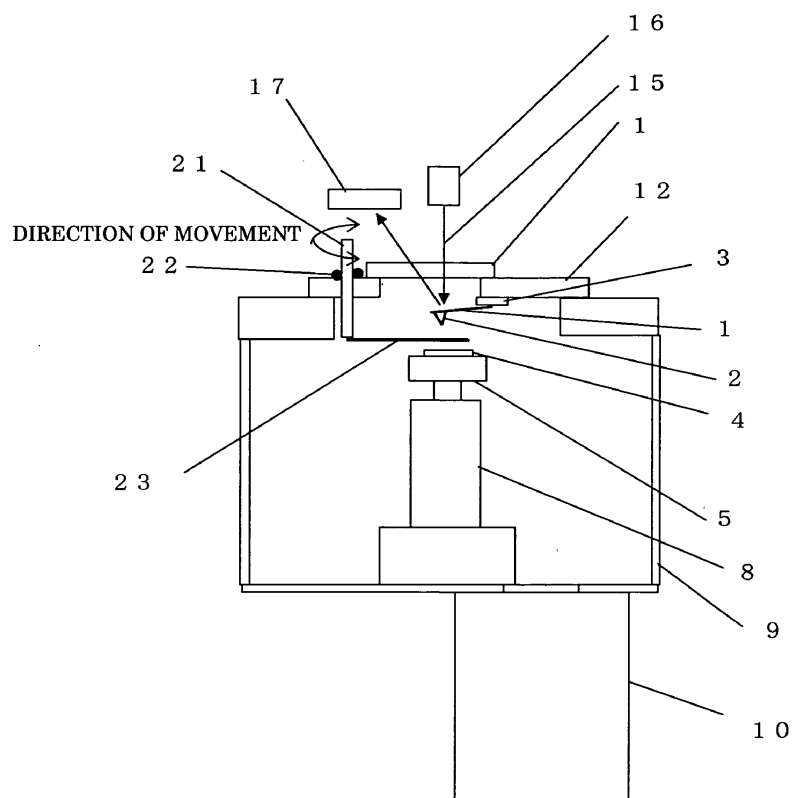
*This subclass/group covers:*

Means to prevent SPM from being disturbed by a condition outside the scanning probe microscope, e.g. vibration, temperature or pressure.

The SPM is protected as a whole under the adverse condition. For example, a specific housing or arrangement to eliminate external vibrations to assure the stability of the microscope, or shielding that protects it from electromagnetic fields.

Illustrative example:

FIG.2



## Informative references

Attention is drawn to the following places, which may be of interest for search:

Environmental regulation means for sample chamber	<a href="#">G01Q 30/08</a>
Regulations/error compensation means integrated in the probe	<a href="#">G01Q 70/04</a>

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## **G01Q 30/20**

### **Sample handling device or methods**

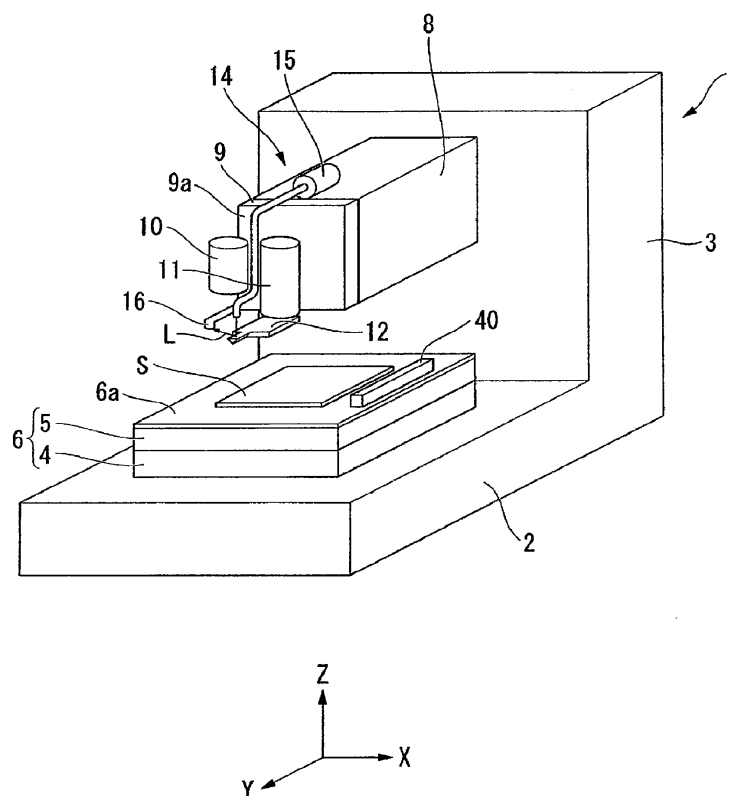
#### **Definition statement**

*This subclass/group covers:*

Methods or devices to perform mechanical operations on a sample in the scanning probe microscope for analysis or investigation, e.g. tweezers, cutting means.

Illustrative example:

FIG. 1



## G01Q 40/00

### Calibration, e.g. of probes

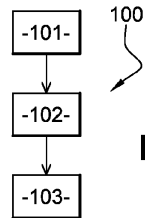
#### Definition statement

*This subclass/group covers:*

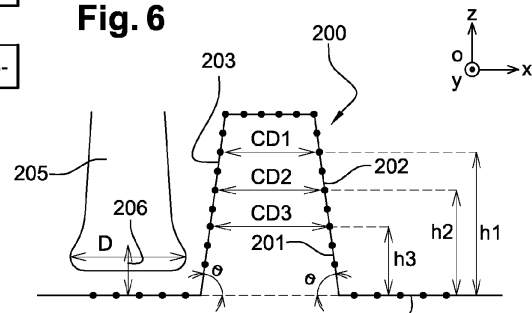
Methods or apparatus used to adjust or rectify a SPM device, e.g. the probe itself, to a desired standard.

Illustrative example:

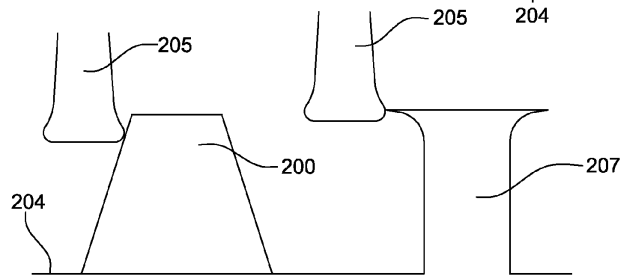
EP 2 312 325 A1



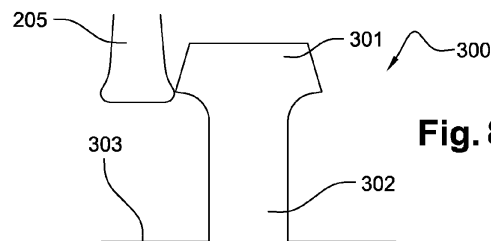
**Fig. 6**



**Fig. 7**



**Fig. 8a**



**Fig. 8b**

**G01Q 40/02**

**Calibration standards and methods of fabrications thereof**

**Definition statement**



*This subclass/group covers:*

Structure with nanometric resolution used for correcting or fixing the performance of the SPM device before its utilization, e.g. grating with a known line separation, and related manufacture.

Illustrative example: EP676614

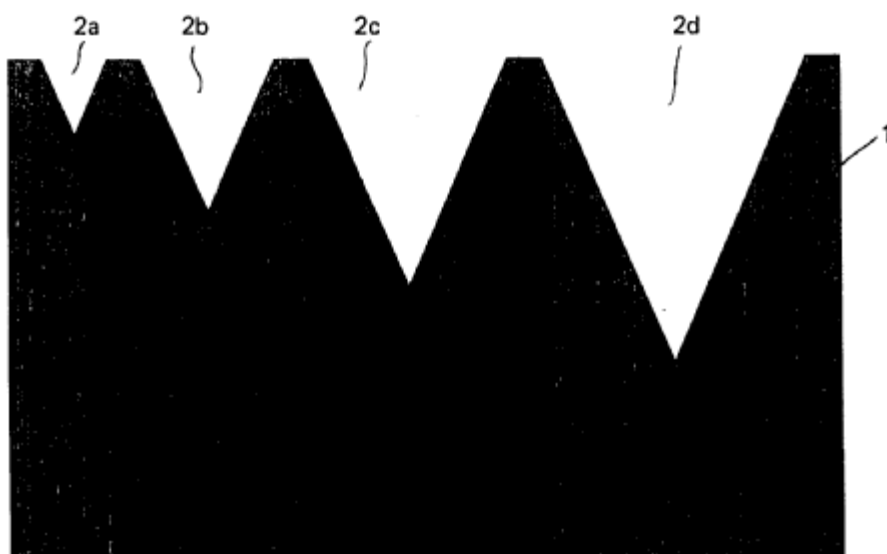


FIG. 2

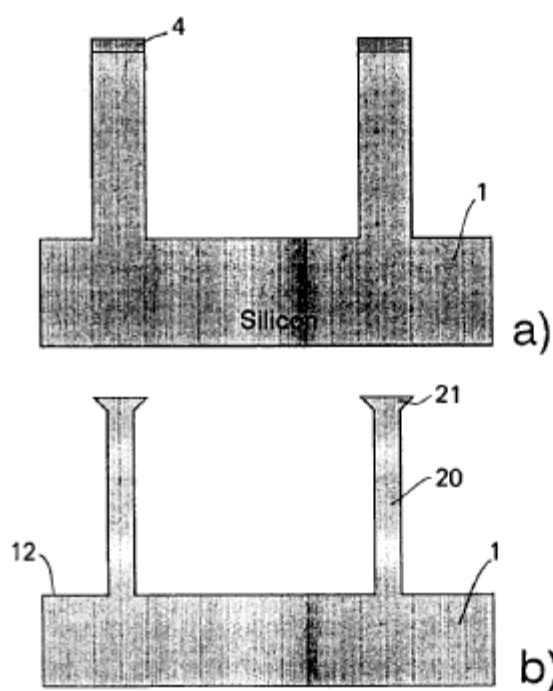


FIG. 3

**G01Q 60/00**

**Particular type of SPM [Scanning Probe Microscopy] or microscopes; Essential components thereof**

## Definition statement

*This subclass/group covers:*

Methods or apparatus for which the type of interaction between the scanning probe tip and the sample surface is specified.

## G01Q 60/02

### Multiple-type SPM, i.e. involving more than one SPM technique

## Definition statement

*This subclass/group covers:*

Methods or apparatus involving two or more different types of interactions between the scanning probe tip and the sample surface, e.g. cantilever-type SPMs other than AFM which are explicitly built for AFM performances.

The device can contain either one probe or more than one probe to perform different types of SPM over the sample.

## Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Devices containing array of tips with similar performance function	<a href="#">G01Q 70/06</a>
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## G01Q 60/04

### STM [Scanning Tunneling Microscopy] combined with AFM [Atomic Force Microscopy]

## Definition statement

*This subclass/group covers:*

Methods or apparatus wherein the two monitored interactions are tunnelling current (STM) and the attractive or repulsive force between the probe and the sample surface (AFM).

Illustrative example:

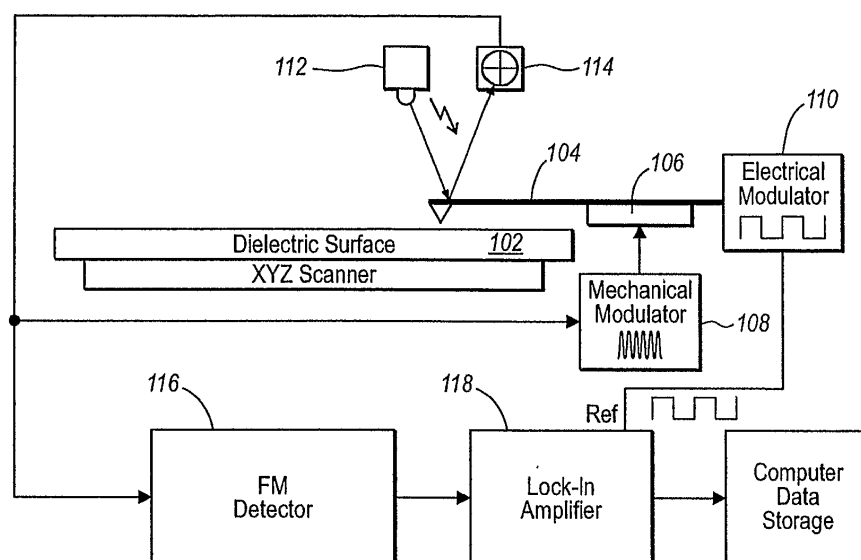


FIG. 1

### Informative references

Attention is drawn to the following places, which may be of interest for search:

Specific STMs	<a href="#">G01Q 60/10</a>
Specific AFMs	<a href="#">G01Q 60/24</a>

### G01Q 60/06

**SNOM [Scanning Near-Field Optical Microscopy] combined with AFM [Atomic Force Microscopy]**

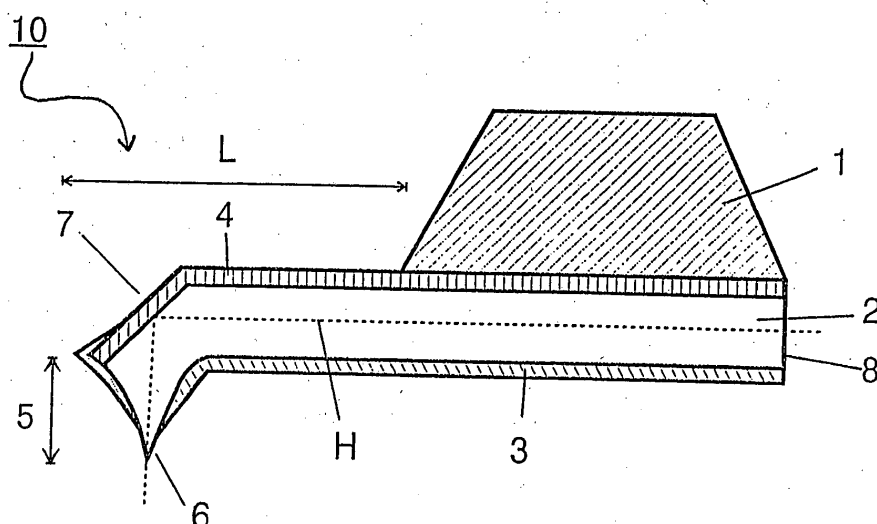
### Definition statement

*This subclass/group covers:*

Methods or apparatus wherein the two monitored interactions are near-field light emitted from the sample surface (SNOM) and the attractive or repulsive force between the probe and the sample surface (AFM).

Illustrative example:

FIG. 1



## Informative references

Attention is drawn to the following places, which may be of interest for search:

Specific SNOMs	<a href="#">G01Q 60/18</a>
Specific AFMs	<a href="#">G01Q 60/24</a>

## G01Q 60/08

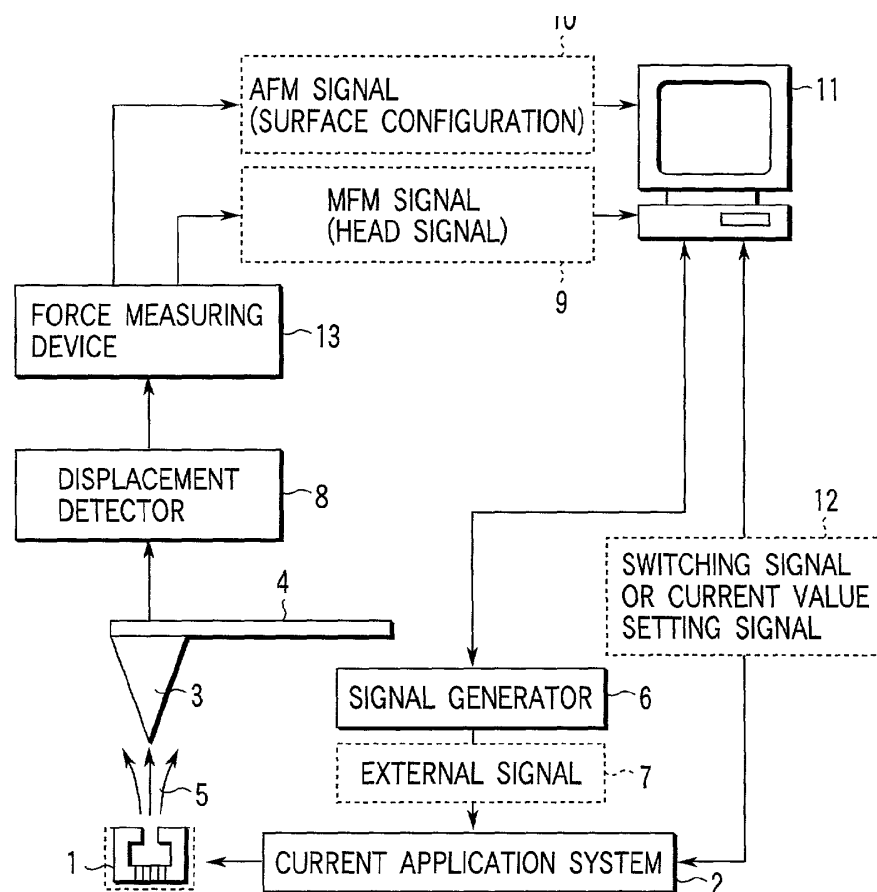
**MFM [Magnetic Force Microscopy] combined with AFM [Atomic Force Microscopy]**

## Definition statement

*This subclass/group covers:*

Methods or apparatus wherein the two monitored interactions are the magnetic force between the sample and the probe (MFM) and the attractive or repulsive force between the probe and the sample surface (AFM).

Illustrative example: US2001/0030536, Figure 2



## Informative references

Attention is drawn to the following places, which may be of interest for search:

Specific MFMs	<a href="#">G01Q 60/50</a>
Specific AFMs	<a href="#">G01Q 60/24</a>

## G01Q 60/10

**STM [Scanning Tunnelling Microscopy] or apparatus therefor, e.g. STM probes**

## Definition statement

*This subclass/group covers:*

Methods or apparatus for SPM wherein the monitored interaction is the tunnelling current between the tip and the sample, which are in very close proximity but not actually in physical contact.

## G01Q 60/12

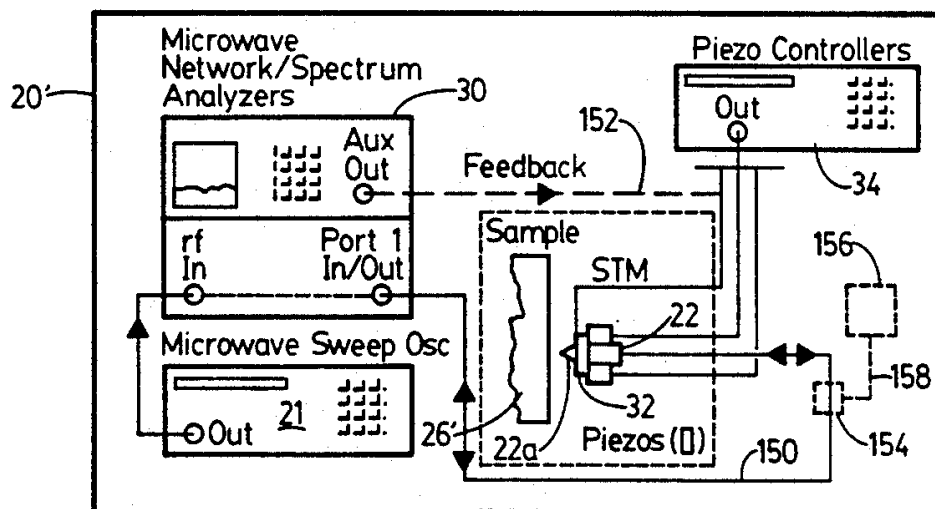
### STS [Scanning Tunnelling Spectroscopy]

#### Definition statement

*This subclass/group covers:*

STM or apparatus therefor wherein the local electronic state of surface is analysed or investigated.

Illustrative example: US52881814



## G01Q 60/14

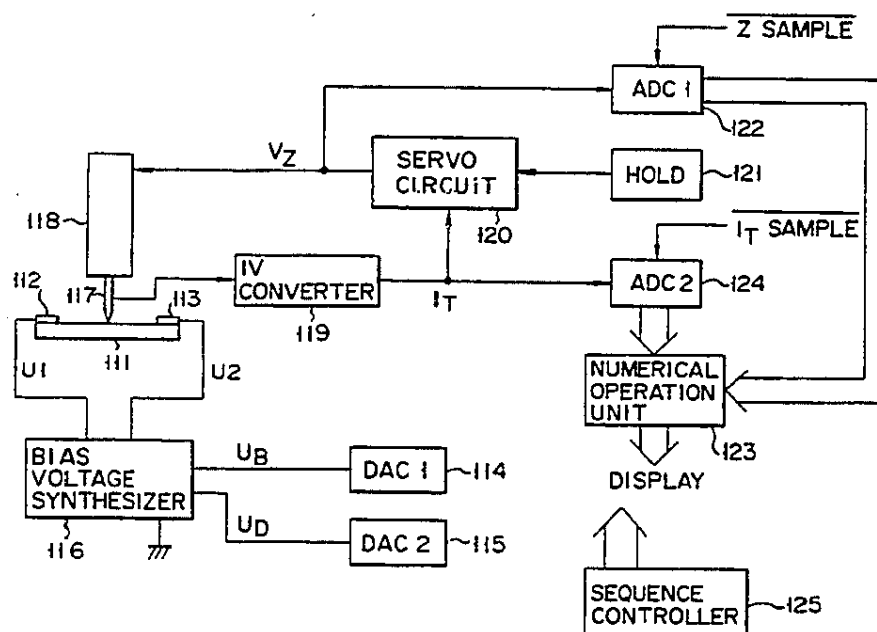
### STP [Scanning Tunnelling Potentiometry]

#### Definition statement

*This subclass/group covers:*

STM or apparatus therefor wherein the electric potential distribution on the sample is analysed or investigated.

Illustrative example: US5378983



## G01Q 60/16

Probes, their manufacture, or their related instrumentation, e.g. holders

### Definition statement

*This subclass/group covers:*

STM probes, their manufacture, or related instrumentation, e.g. holders.

Illustrative example: WO2010/086759



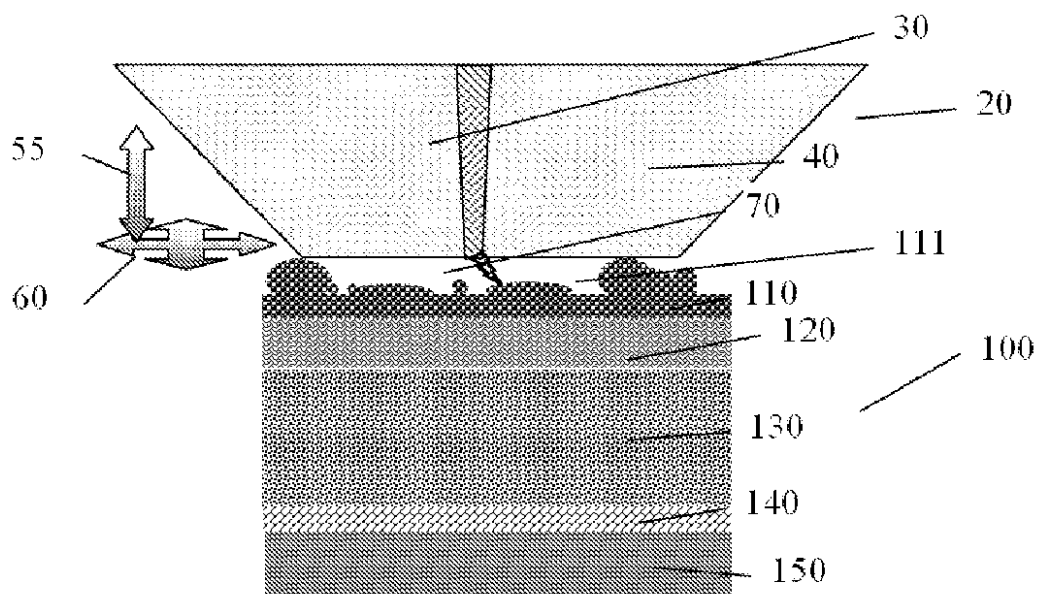


FIG. 2.

## G01Q 60/18

**SNOM [Scanning Near-Field Optical Microscopy] or apparatus therefor, e.g. SNOM probes**

### Definition statement

*This subclass/group covers:*

Methods or apparatus for SPM wherein the monitored interaction is the near-field light emitted or reflected from the object surface.

## G01Q 60/20

### Fluorescence

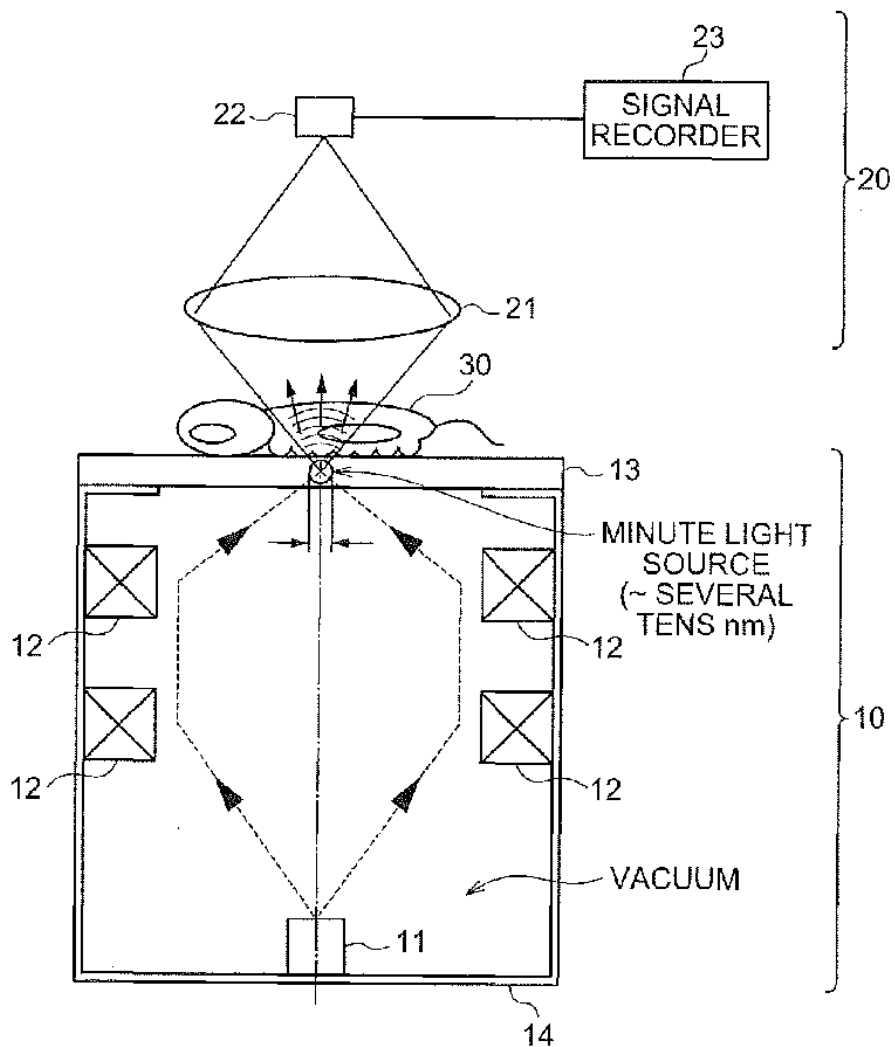
### Definition statement

*This subclass/group covers:*

SNOM or apparatus therefor wherein the near-field light to be monitored is the emission radiation from a sample surface excited by an electromagnetic wave.

Illustrative example: EP2296027

FIG. 3



## G01Q 60/22

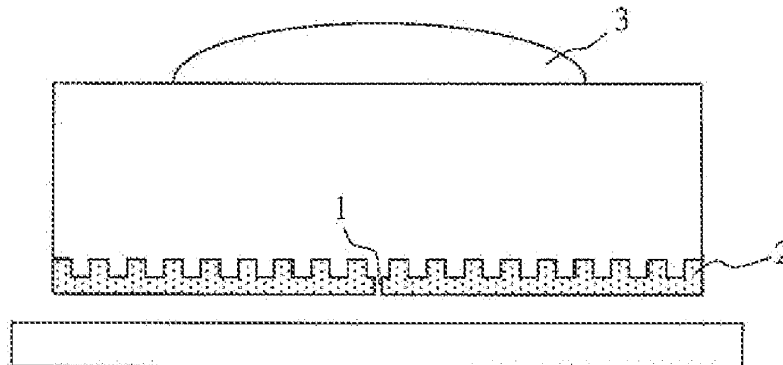
**Probes, their manufacture, or their related instrumentation, e.g. holders**

### Definition statement

*This subclass/group covers:*

SNOM probes, their manufacture or related instrumentation, e.g. holders.

Illustrative example:



## G01Q 60/24

**AFM [Atomic Force Microscopy] or apparatus therefor, e.g. AFM probes**

### Definition statement

*This subclass/group covers:*

Methods or apparatus for SPM wherein the monitored interaction is the short range repulsive or long range attractive force between the probe and atoms of the sample surface.

## G01Q 60/26

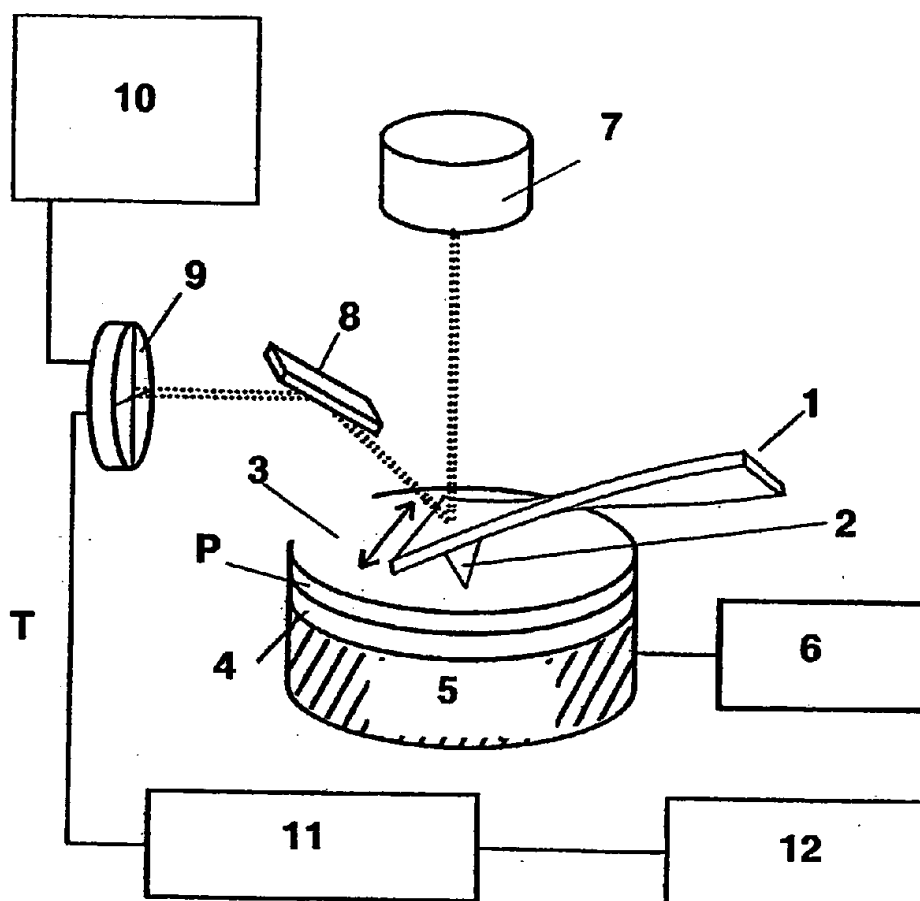
**Friction force microscopy**

### Definition statement

*This subclass/group covers:*

AFM or apparatus therefor wherein the force monitored is the shear force between the probe and atoms of the sample surface.

Illustrative example: US2006/0150719



## G01Q 60/28

### Adhesion force microscopy

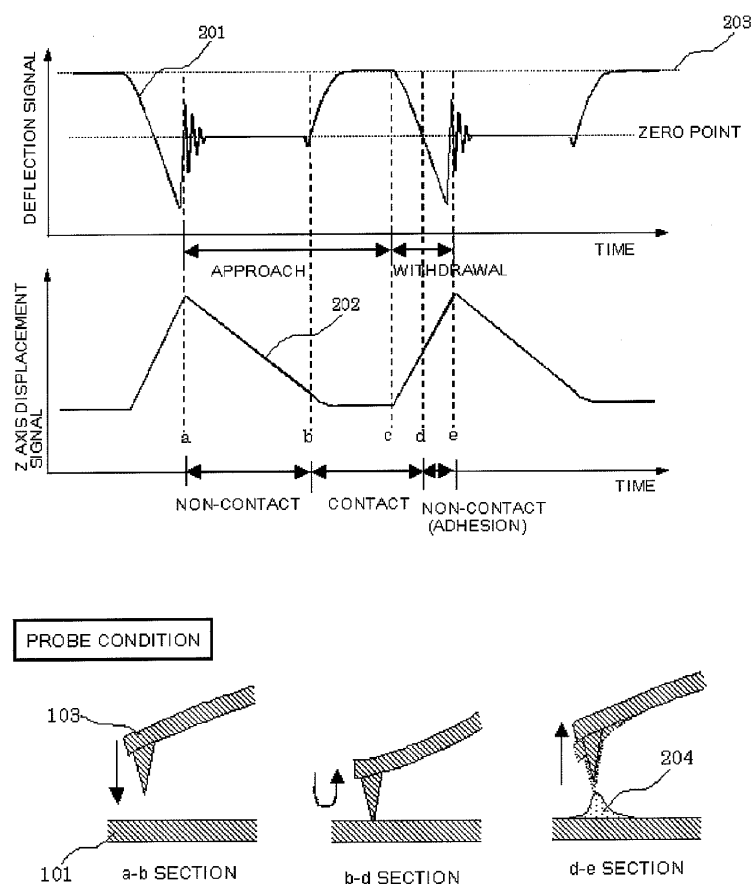
#### Definition statement

*This subclass/group covers:*

AFM or apparatus therefor wherein the force monitored is the adhesion force that tends to keep the probe in contact with the sample surface.

Illustrative example:

FIG.2



## G01Q 60/30

### Scanning potential microscopy

#### Definition statement

*This subclass/group covers:*

AFM or apparatus therefor wherein the force monitored is an electric interaction affected by the electric potential distribution on the sample surface, e.g. Kelvin probe microscopy and Scanning Maxwell stress microscopy.

Also probes for this kind of microscopes are classified here.

Illustrative example: EP1748447

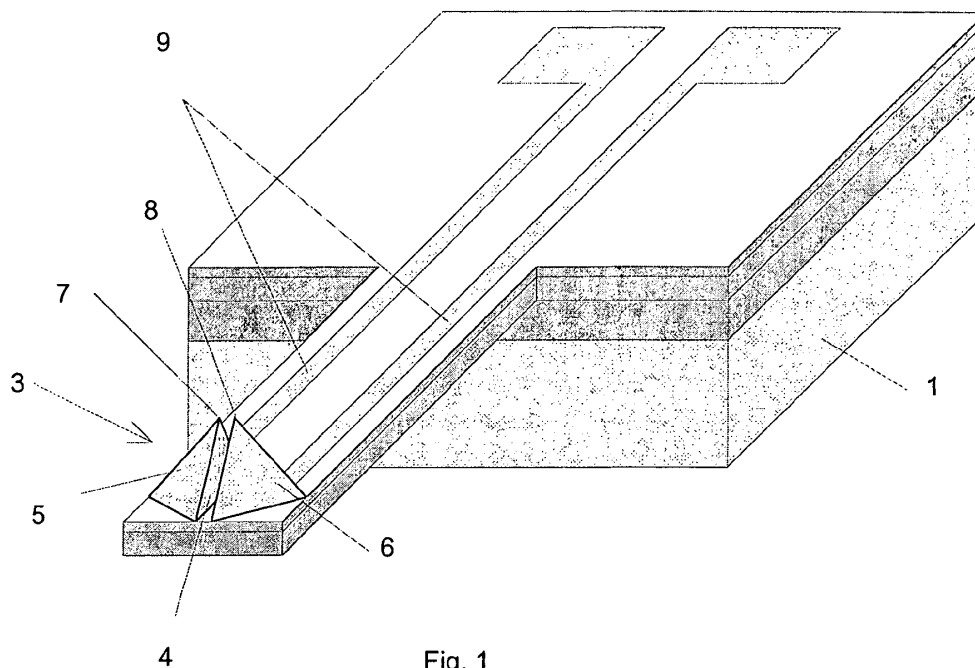


Fig. 1

## **G01Q 60/32**

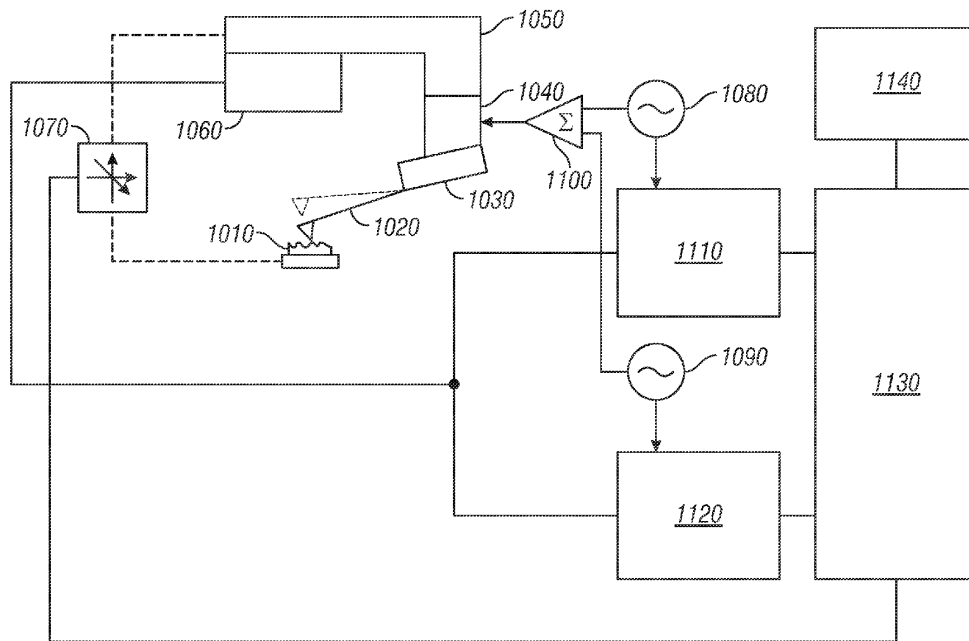
### **AC mode**

#### **Definition statement**

*This subclass/group covers:*

AFM or apparatus therefor wherein the probe is a vibrating cantilever, or is mounted on a vibrating cantilever.

Illustrative example: US2011/0154546



## G01Q 60/34

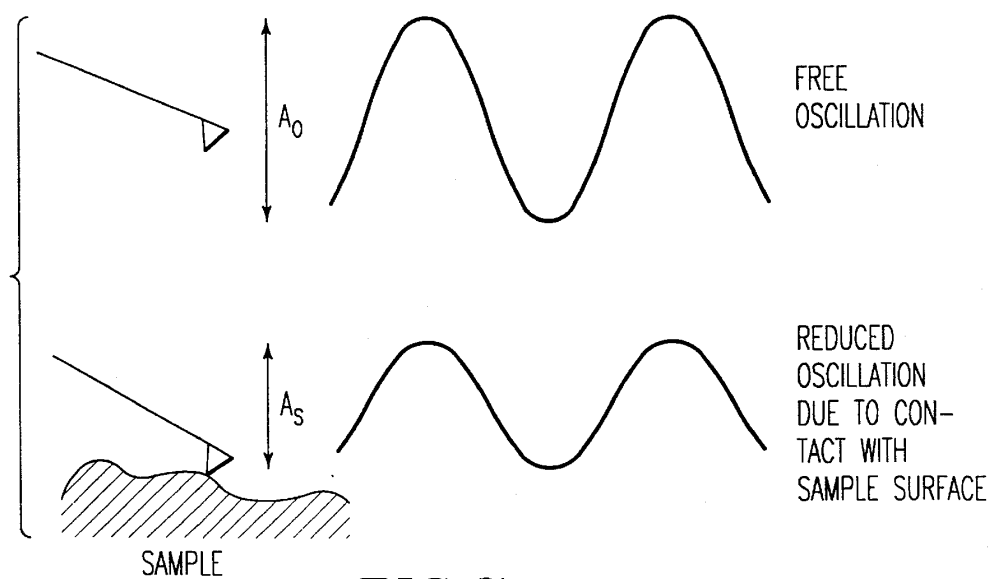
### Tapping mode

#### Definition statement

*This subclass/group covers:*

AFM or apparatus therefor wherein tip of probe touches periodically the sample surface.

Illustrative example: US5519212



**FIG. 7**

## **G01Q 60/36**

### **DC mode**

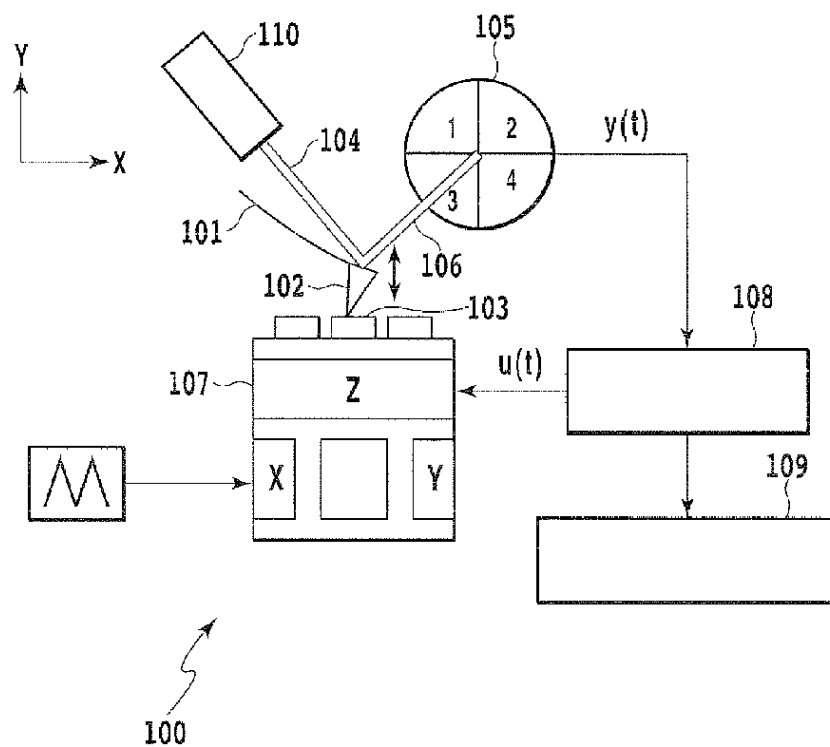
#### **Definition statement**

*This subclass/group covers:*

AFM or apparatus therefor wherein the probe is, or is mounted on, a static (i.e. vibrationless) cantilever.

Illustrative example: EP2131180





**FIG.1**

**G01Q 60/363**

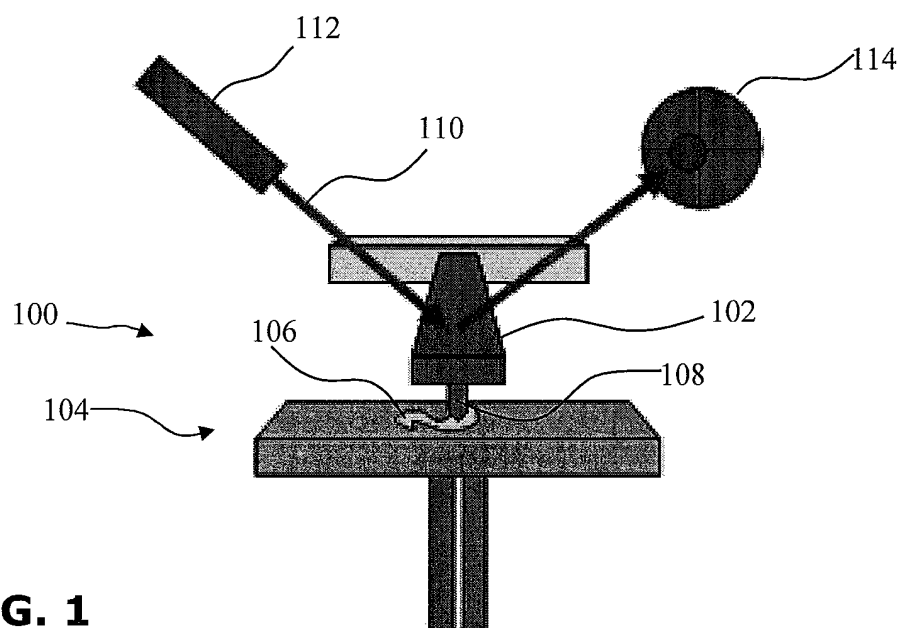
**[N: Contact mode AFM]**

**Definition statement**

*This subclass/group covers:*

AFM wherein the probe is always in contact with the surface.

Illustrative example:



**FIG. 1**

## G01Q 60/366

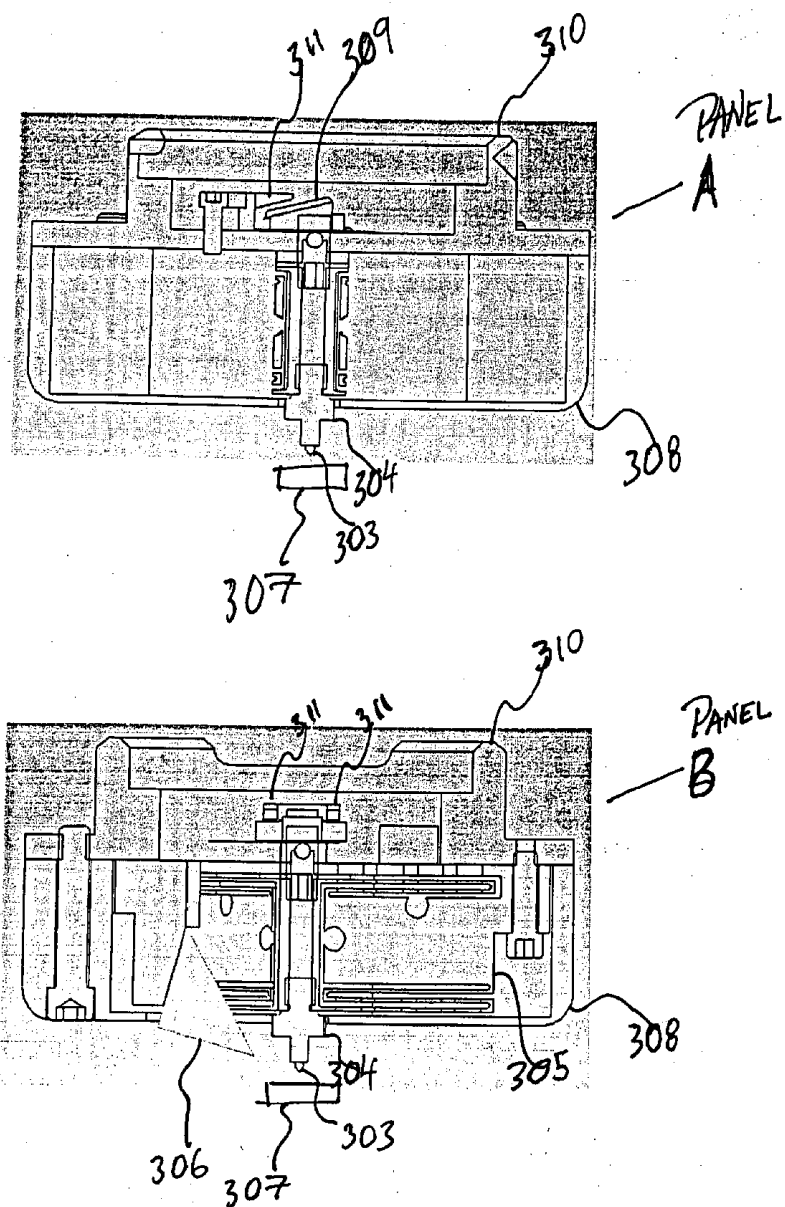
[N: Nanoindenters, i.e. wherein the indenting force is measured]

### Definition statement

*This subclass/group covers:*

Device for measuring indenting force into a surface using SPM probes.

Illustrative example: US2007/0227236



## G01Q 60/38

**Probes, their manufacture, or their related instrumentation, e.g. holders**

### Definition statement

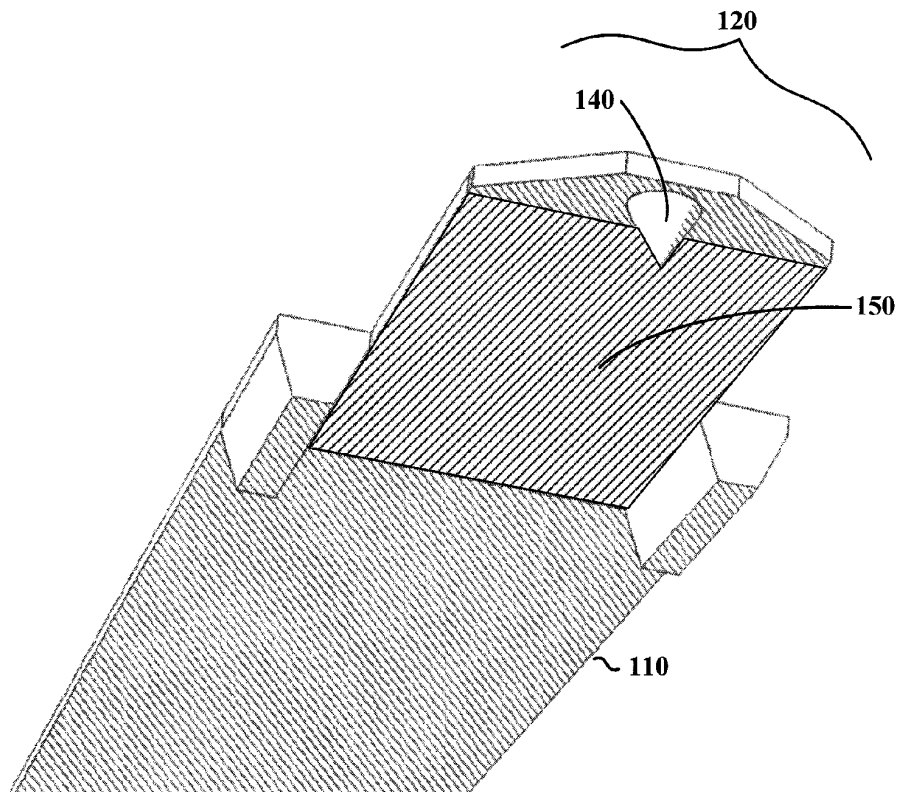
*This subclass/group covers:*

AFM probes, their manufacture, or their related instrumentation, e.g. holders.

Probes for AFM for special applications, like, e.g., tapping mode AFM, Kelvin Force microscopes, etc. are to be classified also in the corresponding groups.

Special shapes or processes for manufacture are classified in this group.

Illustrative example: US2010/0218288



## G01Q 60/40

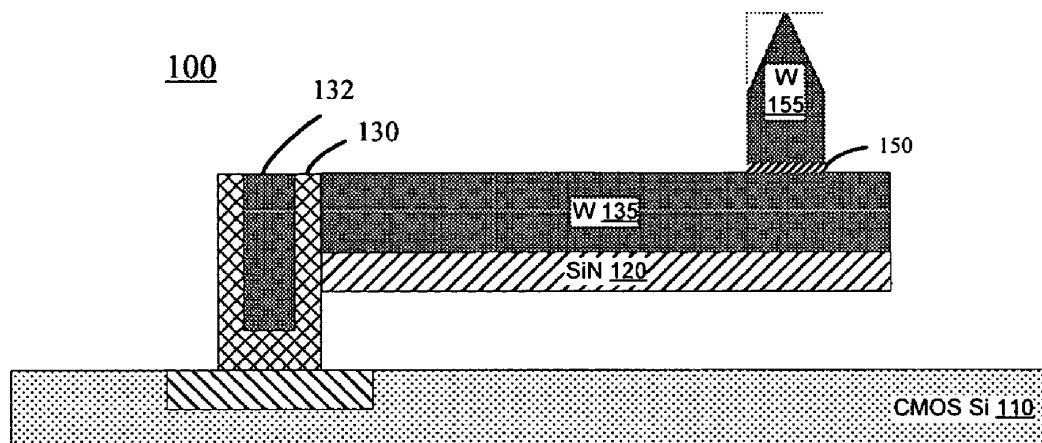
### Conductive probes

#### Definition statement

*This subclass/group covers:*

AFM probe that is made of a material that conducts electric charges.

Illustrative example: US2009/0001488



## Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Conductive probes that perform the function of STM probes	<a href="#">G01Q 60/04</a> , <a href="#">G01Q 60/16</a>
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**G01Q 60/42**

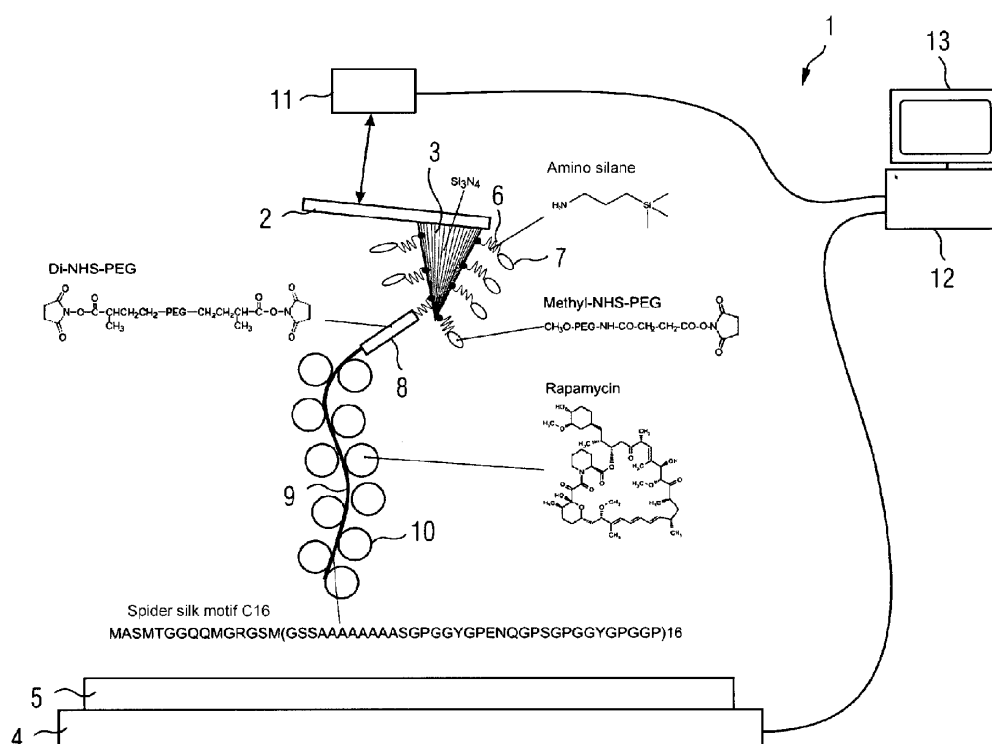
## Functionalization

## Definition statement

*This subclass/group covers:*

AFM or apparatus therefor wherein specific particles are added to the tip to give it another characteristic, e.g. specific chemical receptor for biochemical analysis.

Illustrative example: US2010/0011472



**G01Q 60/44**

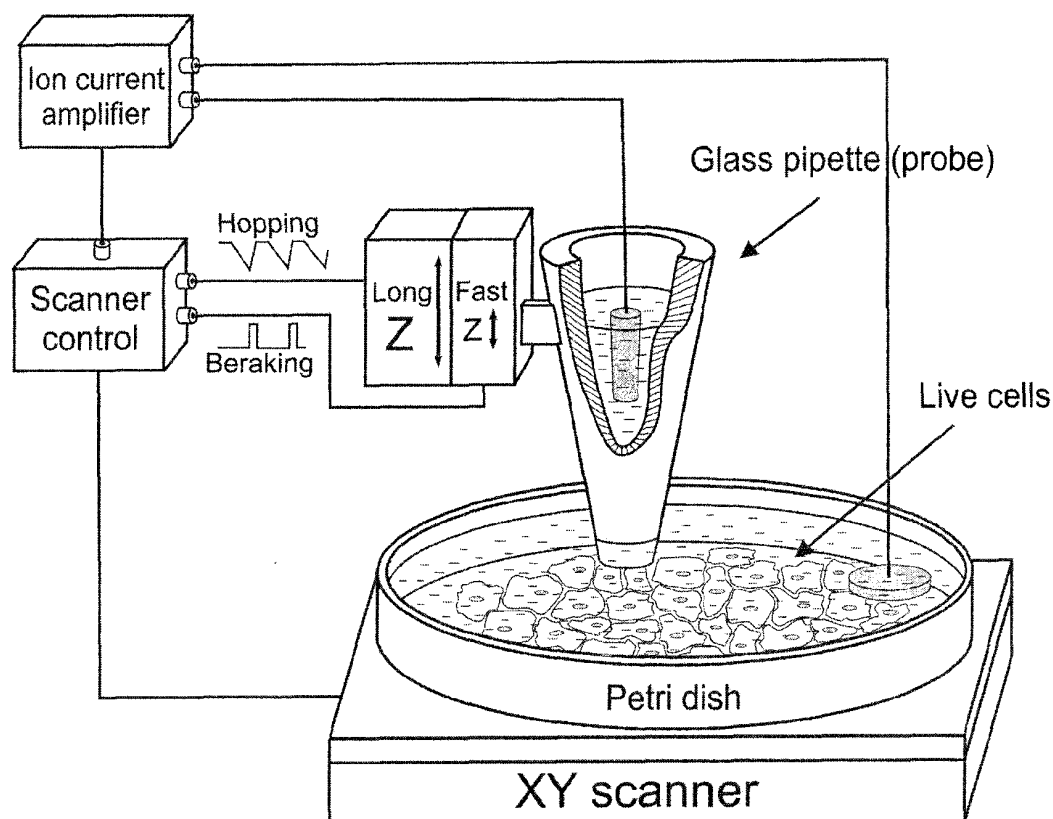
**SICM [Scanning Ion-Conductance Microscopy] or apparatus therefor, e.g. SICM probes**

## Definition statement

*This subclass/group covers:*

Methods or apparatus for SPM wherein the monitored interaction is the ion flow between the probe tip and the sample surface.

Illustrative example: US2011/0131690



## G01Q 60/46

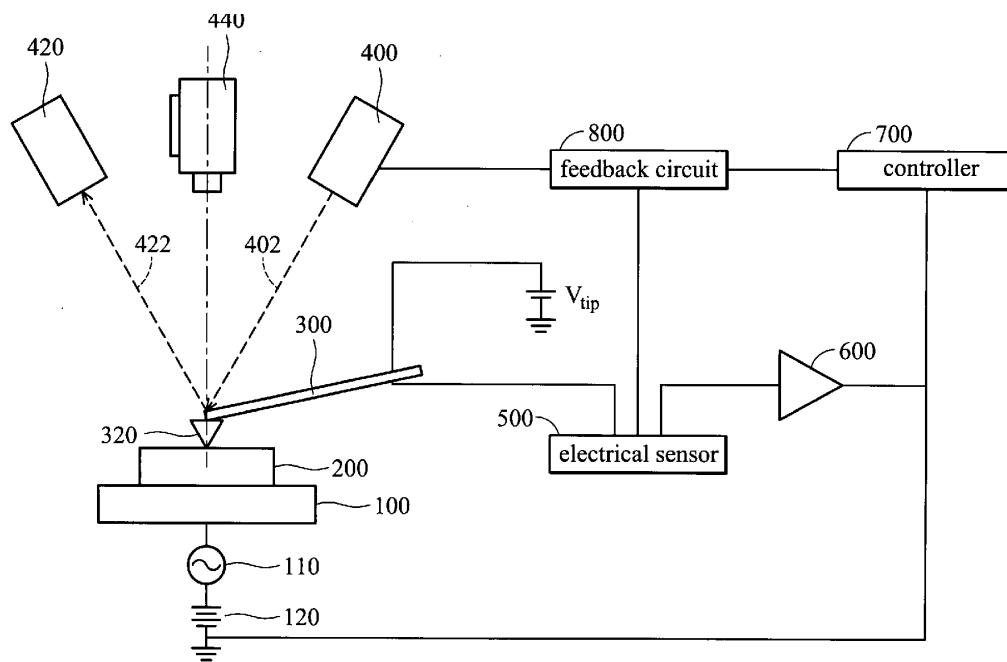
**SCM [Scanning Capacitance Microscopy] or apparatus therefor, e.g. SCM probes**

## Definition statement

*This subclass/group covers:*

Methods or apparatus for SPM wherein the monitored interaction is the electrical capacity between the probe tip and the sample surface.

Illustrative example: US2005/0030054



## G01Q 60/48

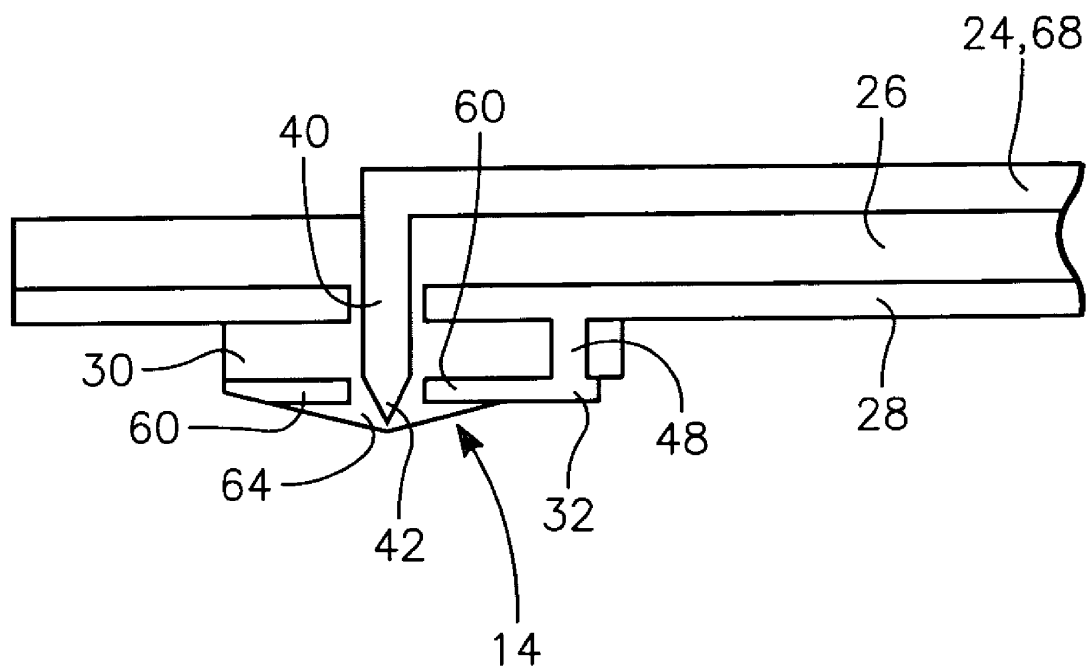
**Probes, their manufacture, or their related instrumentation, e.g. holders**

### Definition statement

*This subclass/group covers:*

SCM probes, their manufacture, or their related instrumentation, e.g. holders.

Illustrative example: US7190175



## G01Q 60/50

**MFM [Magnetic Force Microscopy] or apparatus therefor, e.g. MFM probes**

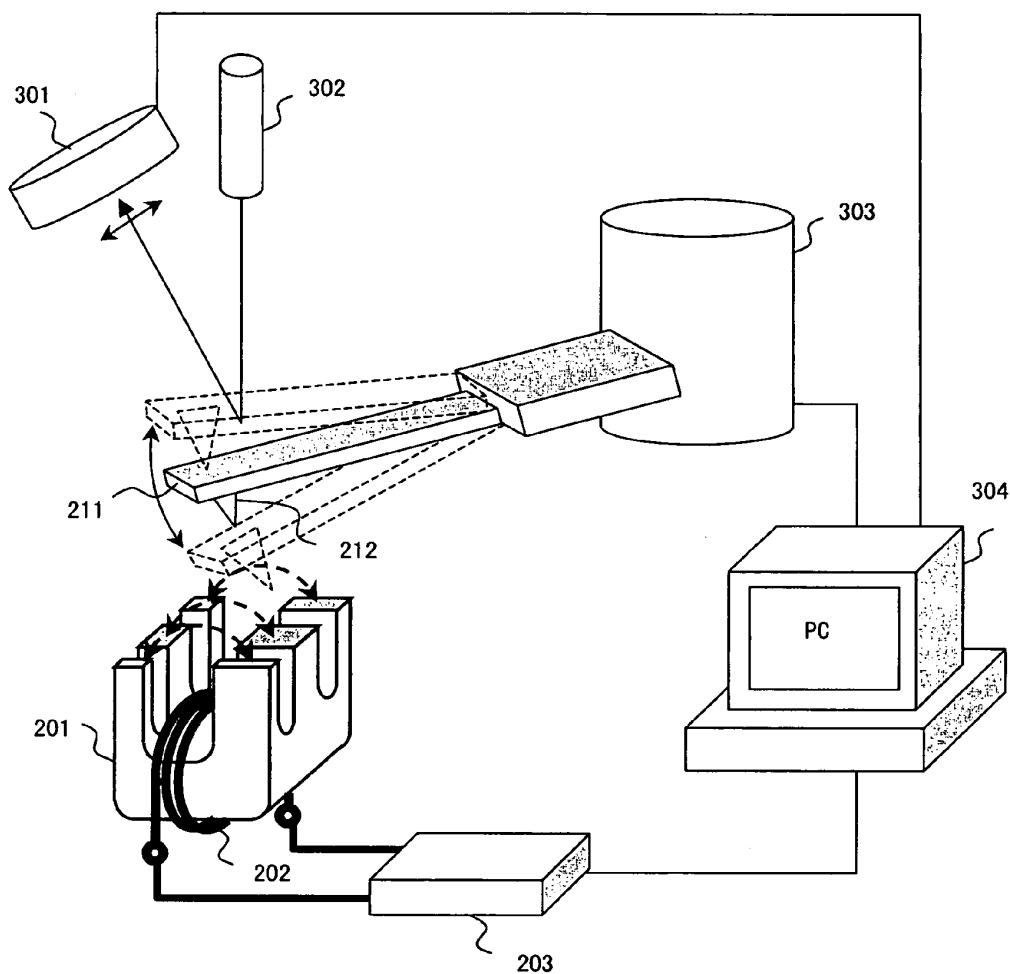
### Definition statement

*This subclass/group covers:*

Methods or apparatus for SPM wherein the monitored interaction is the magnetic force between the probe tip and the sample surface.

Illustrative example: US2006/0139026





## G01Q 60/52

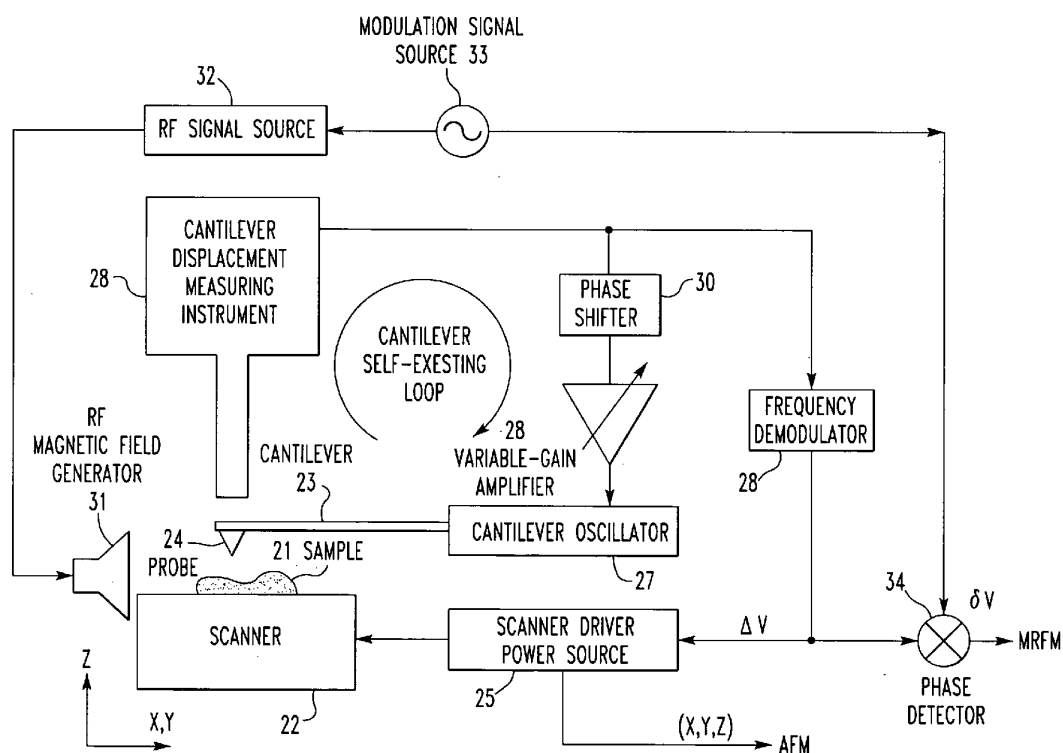
### Resonance

#### Definition statement

*This subclass/group covers:*

MFM or apparatus therefor wherein a spin magnetic moment is induced by a specific magnetic field frequency.

Illustrative example: US2007/0216412



## G01Q 60/54

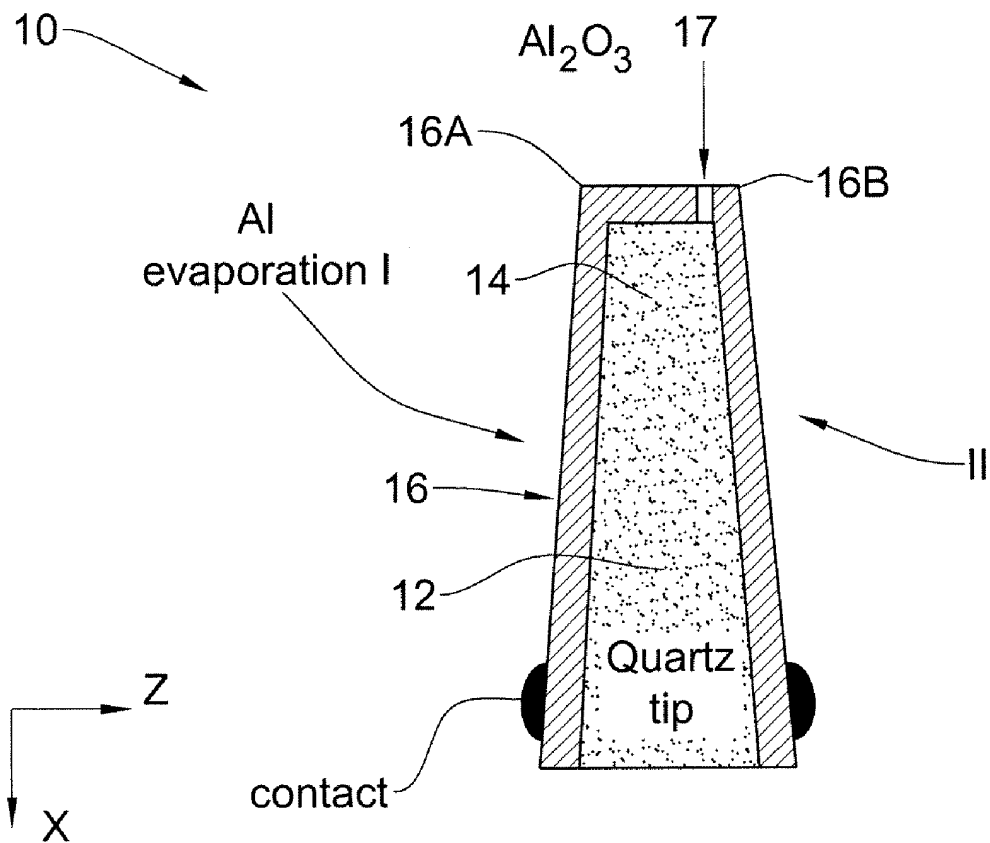
**Probes, their manufacture, or their related instrumentation, e.g. holders**

### Definition statement

*This subclass/group covers:*

MFM probes, their manufacture, or their related instrumentation, e.g. holders.

Illustrative example: US2010/0207622



## G01Q 60/56

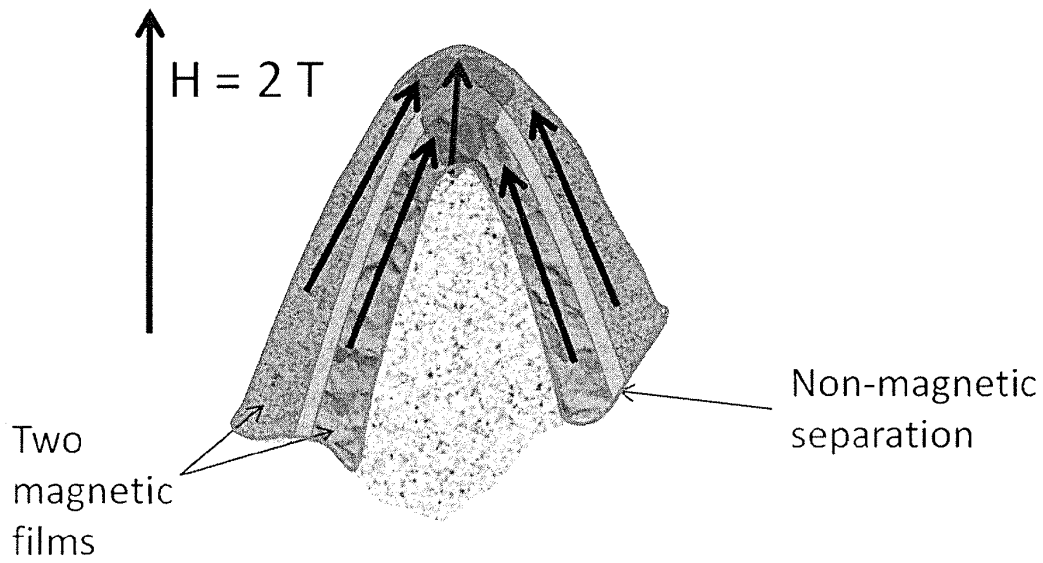
### Probes with magnetic coating

#### Definition statement

*This subclass/group covers:*

MFM probe tips that are coated with some material with specific magnetic property.

Illustrative example: US2010/0138964



## G01Q 60/58

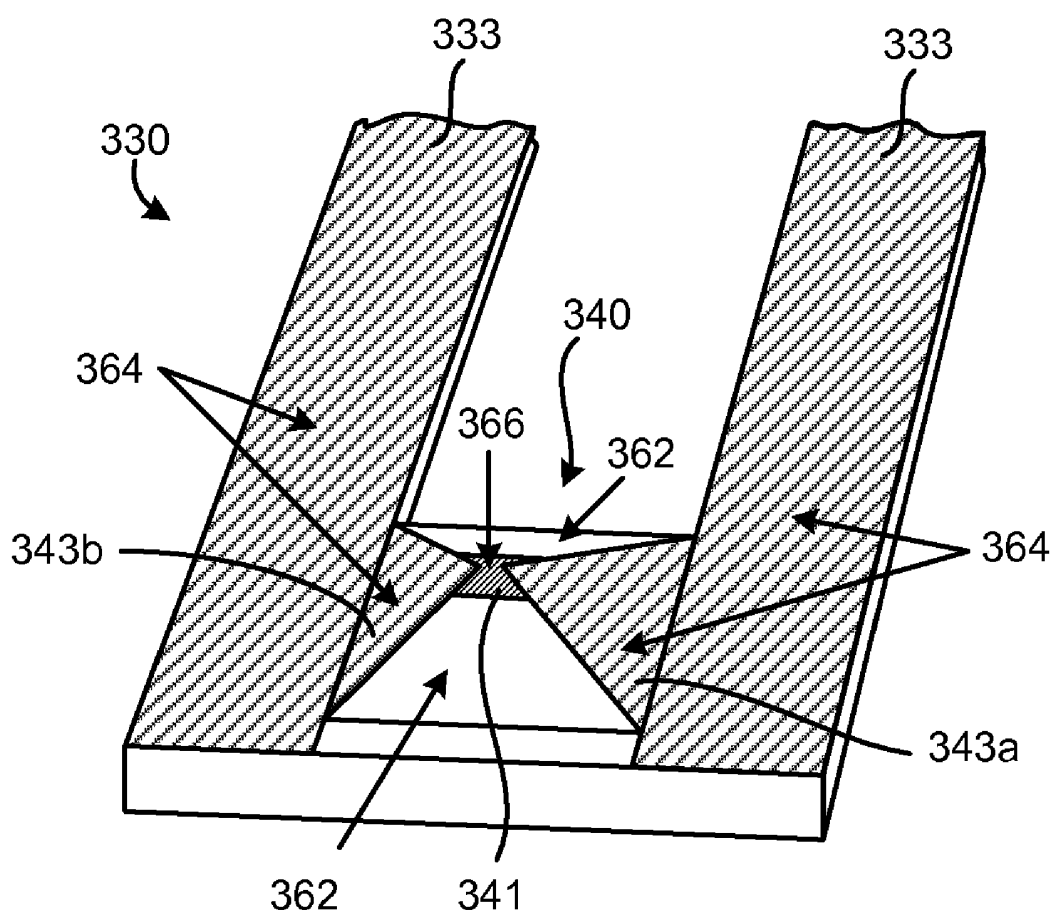
**SThM (Scanning Thermal Microscopy) or apparatus therefor, e.g. SThM probes**

### Definition statement

*This subclass/group covers:*

Methods or apparatus for SPM wherein the monitored interaction is the heat or temperature of the sample surface.

Illustrative example: US2009/0056428



## G01Q 60/60

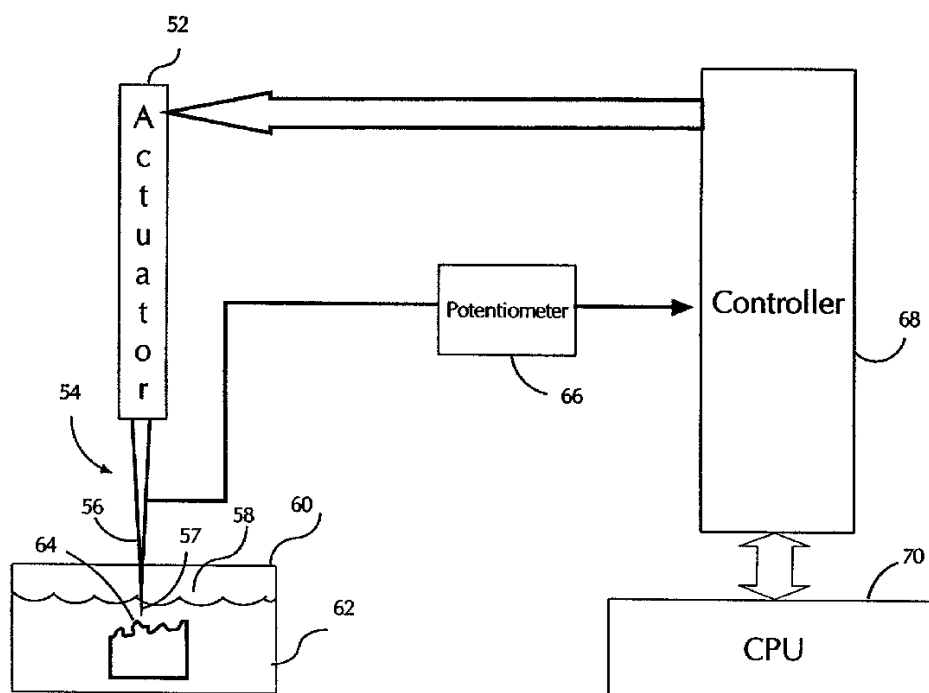
**SECM (Scanning Electro-Chemical Microscopy) or apparatus therefor, e.g. SECM probes**

### Definition statement

*This subclass/group covers:*

Methods or apparatus for SPM wherein the monitored interaction is the Faraday current generated by an electrochemical reaction.

Illustrative example: US7156965



## G01Q 70/00

**General aspects of SPM probes, their manufacture, or their related instrumentation, insofar as they are not specially adapted to a single SPM technique covered by group G01Q60/00**

### Definition statement

*This subclass/group covers:*

General aspects of SPM probes, their manufacture or their related instrumentation, insofar as these probes are not specially adapted to a single particular type of SPM technique covered by group [G01Q 60/00](#) and subgroups.

## G01Q 70/02

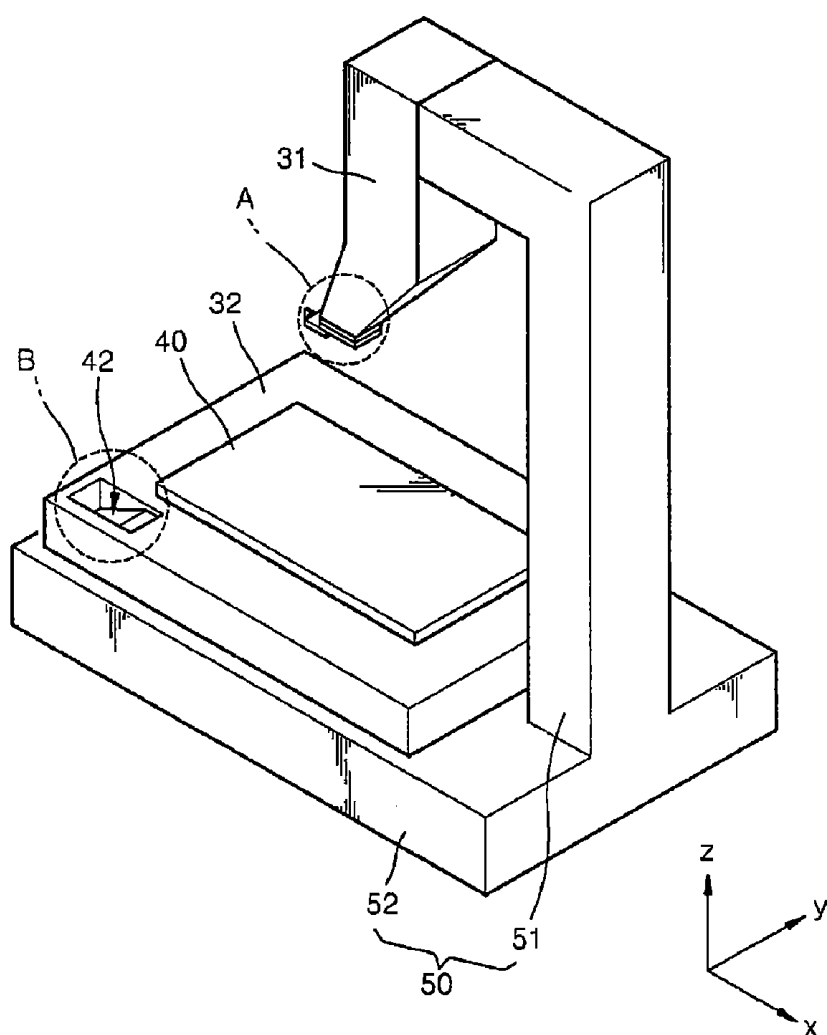
### Probe holders

### Definition statement

*This subclass/group covers:*

General aspects of SPM probe holders.

Illustrative example: US2010/0037360



## G01Q 70/04

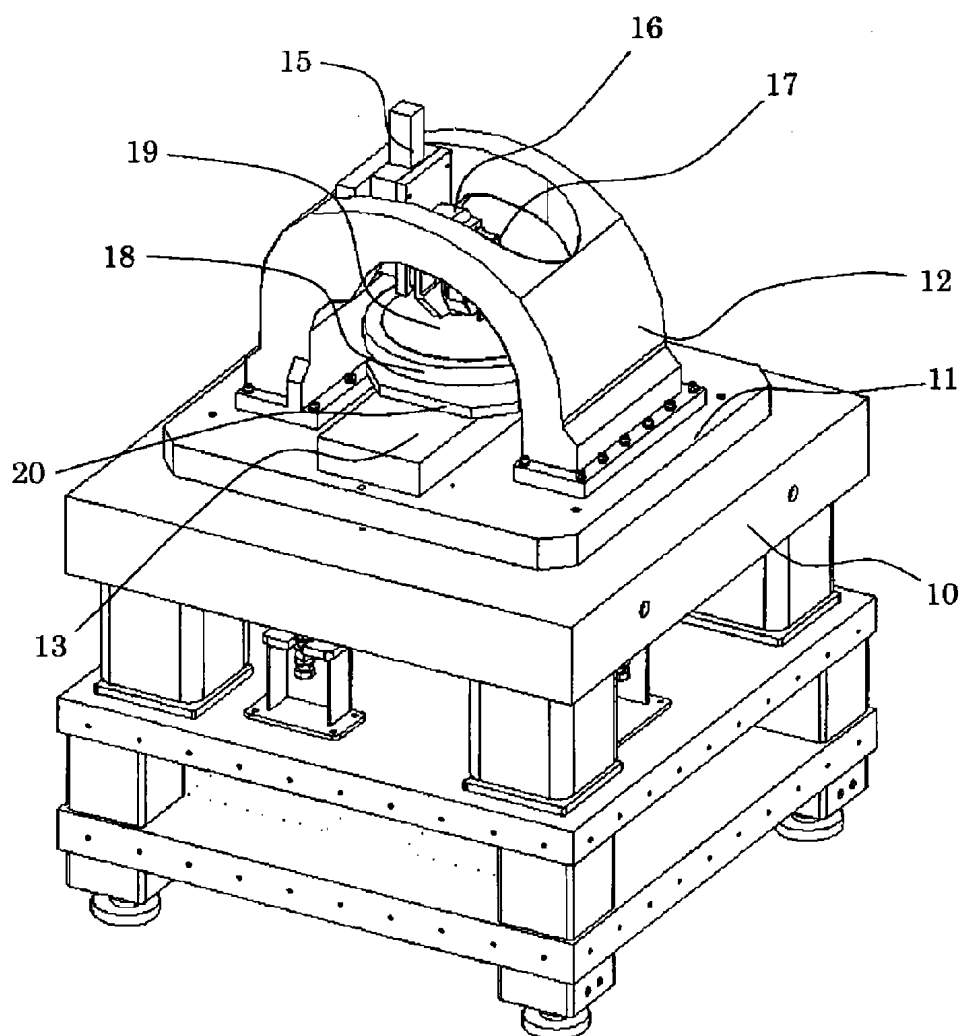
**with compensation for temperature or vibration induced errors**

### Definition statement

*This subclass/group covers:*

General SPM probe holders with integrated means to adjust the probe to correct for errors caused by temperature variations or vibrations.

Illustrative example: US2009/0255016



## Informative references

Attention is drawn to the following places, which may be of interest for search:

Error compensation in general	<a href="#">G01Q 30/06</a>
Protection of the scanning probe microscope in general	<a href="#">G01Q 30/18</a>

## G01Q 70/06

### Probe tip arrays

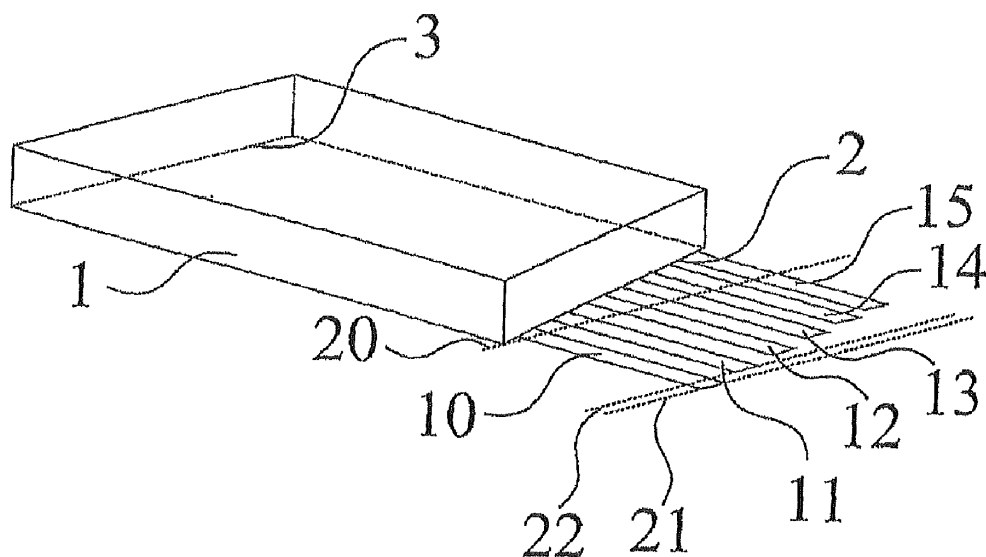
## Definition statement

This subclass/group covers:



General SPM probes wherein multiple tips of similar characteristics form a line or a matrix.

Illustrative example: US2010/0218284



## G01Q 70/08

### Probe characteristics

#### Definition statement

*This subclass/group covers:*

Specific characteristics of general SPM probes.

#### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Process of probe fabrication	<a href="#">G01Q 70/16</a>
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### Special rules of classification within this group

Specific characteristics like shape, material, etc. are covered by the subgroups [G01Q 70/10](#) - [G01Q 70/14](#).

## G01Q 70/10

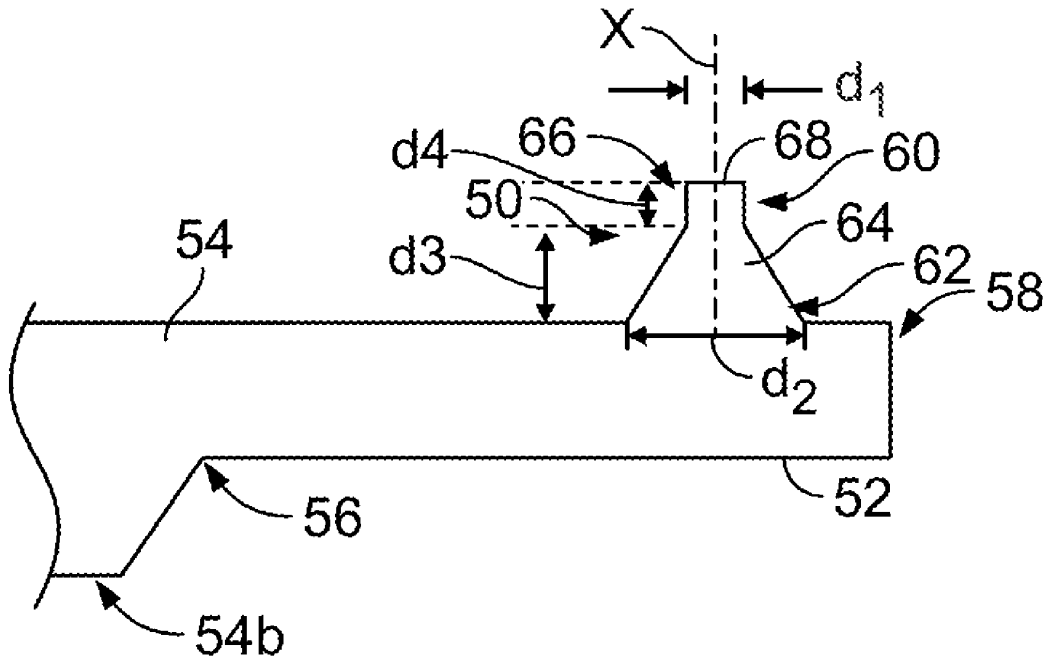
### Shape or taper

#### Definition statement

*This subclass/group covers:*

Specific physical form, degree of slope or angle of the tip in a general SPM probe. With "probe" both tip and cantilever are meant.

Illustrative example: US2009/005092



## G01Q 70/12

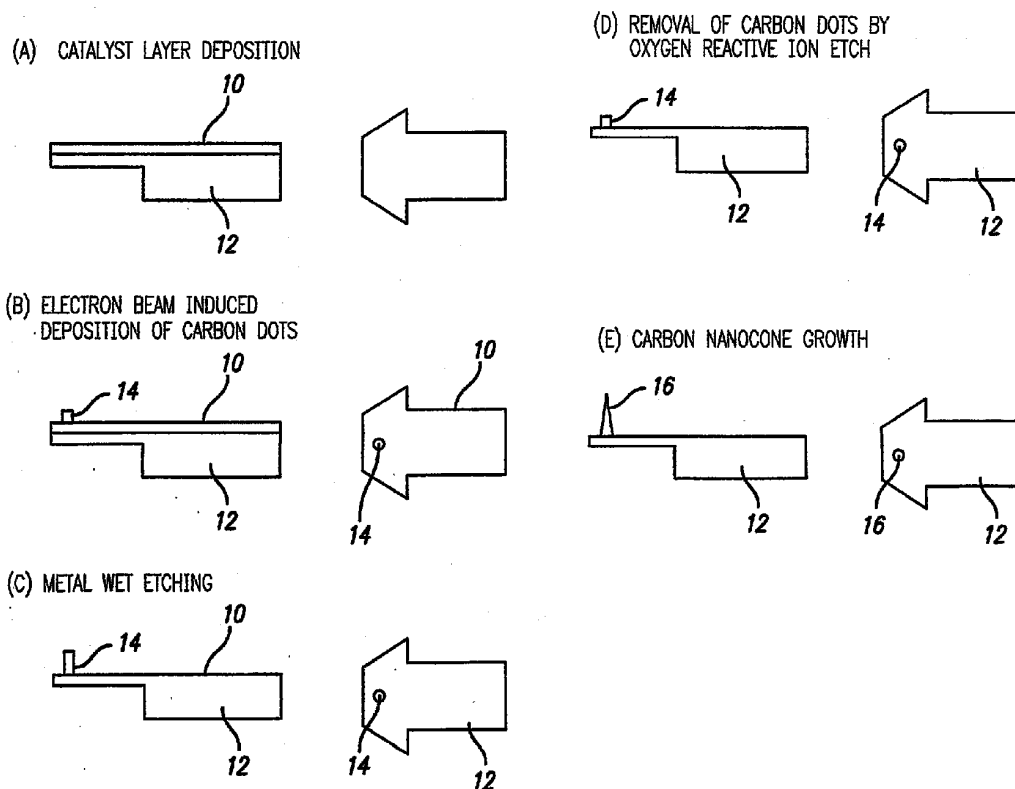
### Nano-tube tips

#### Definition statement

*This subclass/group covers:*

General SPM probes having a nano-sized tube such as Carbon nano-tube.

Illustrative example: US2010/0229265



## G01Q 70/14

### Particular materials

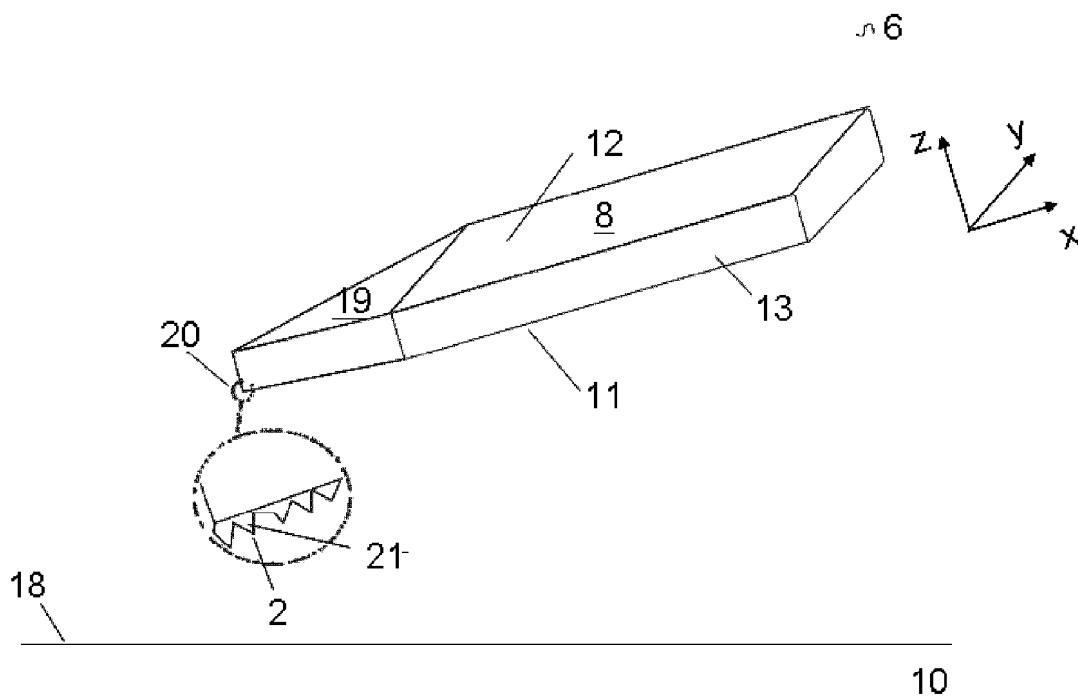
#### Definition statement

*This subclass/group covers:*

Specific choice of materials for general SPM probes or components thereof. For example, where a cantilever or a coating on the tip is made of some material that gives a particular property to the scanning probe.

Materials of cantilever and/or tip.

Illustrative example: US2009/0313730



## G01Q 70/16

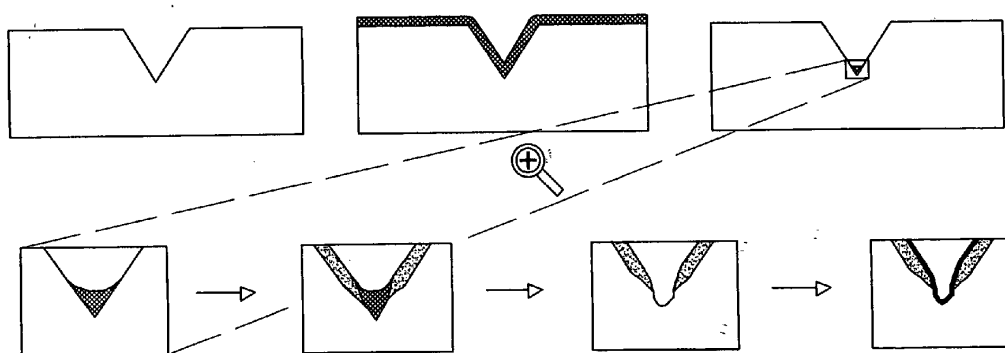
### Probe manufacture

#### Definition statement

*This subclass/group covers:*

Manufacture aspects of general SPM probes.

Illustrative example: US2011/039100



Fabrication scheme for the silicon oxide pyramid containing a nano scale metal tip.

#### Special rules of classification within this group

Manufacture of probes for particular kinds of SPM (e.g. AFM, STM, SNOM) are classified in the corresponding [G01Q 60/00](#) subgroup.

## G01Q 70/18

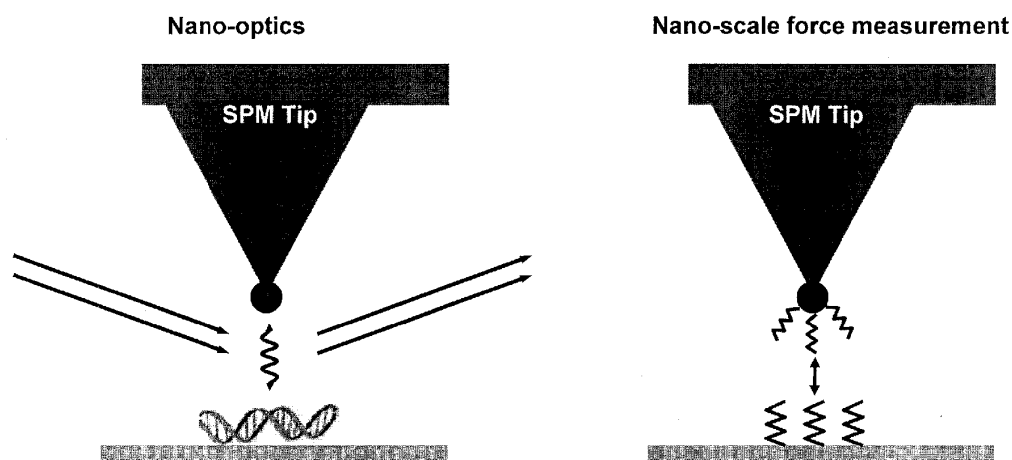
### Functionalization

#### Definition statement

*This subclass/group covers:*

General SPM probes, wherein specific particles are added to the tip to give it another characteristic, e.g. specific chemical receptor for biochemical analysis.

Illustrative example: US2008/0093550



#### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Functionalized AFM probes	<a href="#">G01Q 60/38</a>
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## G01Q 80/00

**Applications, other than SPM, of scanning-probe techniques (manufacture or treatment of nano-structures B82B3/00; recording or reproducing information using near-field interaction G11B9/12, G11B11/24, G11B13/08 )**

#### Definition statement

*This subclass/group covers:*

Specific applications, different from SPM, of scanning-probe techniques.

## References relevant to classification in this main group

*This subclass/group does not cover:*

Manufacture or treatment of micro-structures	<a href="#">B81C</a>
Manufacture or treatment of nano-structures	<a href="#">B82B 3/00</a>
Recording or reproducing information using near-field interaction	<a href="#">G11B 9/12</a> , <a href="#">G11B 11/24</a> , <a href="#">G11B 13/08</a>

## Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Specific SPM techniques, apparatus therefor or components thereof, e.g. probes	<a href="#">G01Q 60/00</a>
General aspects of SPM probes	<a href="#">G01Q 70/00</a>